MARINE RECORD

ESTABLISHED 1878.

VOL. XXII, No. 10. CLEVELAND---MARCH 9, 1899---CHICAGO. $2.00 Per Year. 5c. Single Copy

UNITED STATES COMMERCIAL AGENTS.

The United States Bureau of Foreign Commerce has received inquiries from foreign sources as to the status and duties of commercial agents in the consular service of the United States. It is thought that these inquiries have been prompted by the activity of the consular officers in obtaining commercial information. In view of the fact that these inquiries indicate the impression that the commercial agents have special functions in the collection of information for American manufacturers and exporters, it is thought to be desirable to explain that they have no other status than that of ordinary consular officers, and are not more particularly engaged in the work of securing commercial information than are the other members of the consular corps.

The following synopsis of the Consular regulations on the subject will show the slight differences, mainly of a technical character, between the commercial agents and the consuls:

"Consuls general and consuls are appointed by the President, by and with the advice and consent of the Senate. Commercial agents are appointed directly by the Secretary of State, acting for the President.

"Commercial agents are by the laws of the United States full, principal, and permanent consular officers. No distinction is made by statute between them and a consul. They differ from consuls only in rank or grade. The order of official precedence is (1) consuls-general, (2) consuls, (3) commercial agents, (4) vice-consular officers, (5) deputy consular officers, etc. Consuls and commercial agents rank with captains in the navy or brigadier-generals in the army.

"Commercial agents derive their functions from the same statutes as consuls-general and consuls, and are entitled to enjoy all the powers, immunities, and privileges that under public law or otherwise are accorded to the consular office. The title of the office as representing a distinct grade in the consular service is peculiar to the service of the United States. It is usual to ask formal recognition and an exequatur for a commercial agent from the Government to which he is accredited, as in the case of other principal officers.

"Commercial agents in the consular service of the United States are to be distinguished from certain officers described in international law by the same title, who are not usually regarded by other powers as entitled to the full rank and privileges of a consular officer. The exigencies of the public service of the Government have from time to time made necessary the appointment of commercial agents of the character and with the restricted functions and privileges of such officers as known to international law, and this right is at all times reserved. In those instances, however, in which officers of this title and character have been appointed, the appointments have usually been made to countries the Government of which had not been recognized by the United States or into which it was desired to send a confidential agent whose recognition need not be asked from the local government. Commercial agents appointed previous to Aug. 1, 1856, were of this limited character. An act of Congress of that date established their rank as consular officers and superadded to their former powers the functions that appertain to the office of consul."

WEATHER FORECASTS.

At the present time this is the only country where the forecast of the weather is made for a longer period than 24 hours, some of the daily forecasts in the United States covering a period of 48 hours and 36 hours respectively. A very high per centage of success is also attributed to the weather forecasts issued in this country. The annual grant for the maintenance of the English weather office is about $75,000, with which sum the whole system of the British Islands has to be taken care of. Russia ranks foremost among all the European nations for meteorological research. There is a complete network of stations dotted over its vast territory, the observations being made with verified standard instruments, belonging to the Russian weather office. The amount spent annually in Russia on the maintenance of its weather organization is nearly $200,000. In this country the work of the Weather Bureau costs yearly about $975,000, which is 13 times as much as is spent on the weather by the English government.

SHIPPING AND MARINE JUDICIAL DECISIONS.

COLLISION—STEAM AND SAILING VESSELS—LIABILITY OF TUG AND TOW—A ship in tow of a steam tug, on a hawser about 175 fathoms long, but having her sails set to assist the tug, was making from seven to eight miles an hour when she collided with a schooner making five or six miles. The collision occurred in the daytime, on a clear day, and the vessels had been within sight of each other for a number of hours, and for some time their courses had been converging. The schooner had the right of way, under the sailing rules, and properly kept her course. The tug and ship kept on their course, with the apparent intention of crossing ahead of the schooner, in violation of the rules, until it was seen to be impossible, in reliance on an erroneous belief that the schooner intended to change her course, after which the tug attempted to sheer and pass the schooner's stern, but the ship failed to follow and the collision resulted. There was a pilot on board the ship, to whose order the tug was subject, but no orders were given. Held, that both tug and ship were at fault. The Peru and the Relief, 91 Fed. Rep. 426.

ENGINEERS ON THE OREGON.

The engineer personnel of the Oregon displayed as magnificent manhood as has ever been seen upon the sea in the run of that vessel from Puget sound to Jupiter inlet, a journey of over 14,500 miles, lasting 79 days, during which there were no stops excepting for coal, and not one hour's delay through derangement of machinery. This record is wholly without parallel; it is, far and away, the most remarkable ever made by any war ship of any navy in the world. It was won only through severe hardships and unwearying toil, by the ceaseless vigilance and care of officers and men. Twenty hours' work without rest, officers feeding the furnace with their own hands, are incidents that, on not a few occasions, marked this grim race against time by men who, knowing that the good ship was needed in the distant battle line, had determined, with unconquerable pluck, to take her there. The result the world knows; the reward came when the Colon struck her flag.

The long run of the O egon was not made under the conditions which prevail in battle. Despite the undeniable suffering of this memorable journey, the environment of the engineers' force in action was much worse. Then all but a few watertight doors are closed, battle hatches are fitted, and the men below the protective deck are sealed in what may be living tombs, with no fleeting glimpse of sea and sky, no sight of a streaming flag, no "rapture of the fight" to cheer them on. The air grows dense and moist, the temperature reaches anything between 130 and 190 degrees Fahrenheit in engine and fire rooms, and the whirl of the blowers, the flying coal dust, the roar of furnaces and the hum of flying machinery combine to make this lower world an inferno of discomfort and danger. The stationing of men at the boiler and engine stop valves is the silent warning that a well-planted shot may let loose steam and death; and, although there is no visible defense against the torpedo and the ram, the "unseen heroes" of this force know that either may at any moment end all.—Commodore G. W. Melville, in the Stevens Indicator.

BEACONS BUOYS AND DAY MARKS ON THE NORTHERN LAKES AND RIVERS.

OFFICE OF THE LIGHT-HOUSE BOARD,
Washington, D. C.

All buoys in the lakes and their adjacent waters shall be kept in their respective positions as long as possible in the fall without running the risk of their loss by being caught in the ice, and they shall be promptly replaced in the spring after the ice is gone.

NOTICE TO MARINERS.

Mariners and others interested in commerce and the preservation of life and property from loss by shipwreck on our coasts are earnestly requested to give prompt information to the Inspector of the Ninth Light-House District, Chicago, Ill., the Inspector of the Tenth Light-House District, at Buffalo, N. Y., or the Inspector of the Eleventh Light-House District, at Detroit, Mich., of cases in which any of the buoys or day marks described in this list are out of position, and of all cases in which the published instructions from this Board are not strictly executed, that the Board may, with as little delay as possible, apply the proper remedy and prevent neglect of duty in matters connected with the day marks of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and he hereby is, authorized and directed to adopt and prescribe suitable rules and regulations governing the movements and anchorage of vessels and rafts in Saint Marys River, from Point Iroquois, on Lake Superior, to Point Detour, on Lake Huron, and for the purpose of enforcing the observance of such regulations the said Secretary is hereby authorized to detail one or more revenue cutters for duty on said river.

SEC. 2. That all officers of the Revenue-Cutter Service who are directed to enforce the regulations prescribed by the above rules are hereby empowered and directed, in case of necessity, or when a proper notice has been disregarded, to use the force at their command to remove from channels or stop any vessel found violating the prescribed rules.

SEC. 3. That in the event of the violation of any such regulations or rules of the Secretary of the Treasury by the owners, master, or person in charge of such vessel, such owners, master, or person in charge shall be liable to a penalty of two hundred dollars, and the vessel, its tackle, apparel, furniture, and cargo, at any time used or employed in violation of such regulations, shall be forfeited to the United States: Provided, That the Secretary of the Treasury may remit said fine or release said vessel on such terms as he may prescribe: Provided also, That nothing in this Act shall be construed to amend or repeal the Act entitled "An Act to regulate navigation on the Great Lakes and connecting tributary waters as far east as Montreal."

LIFE-SAVING.

The Executive Committee of the Society of Naval Architects and Marine Engineers invites correspondence as to papers to be read at the seventh annual meeting in November next. It is necessary for intelligent discussion that papers should be in print 30 days before the meeting, and, therefore, members who desire to submit papers or who have suggestions to make are requested to communicate with the secretary, Mr. Francis T. Bowles, 12 West Thirty-first street, New York, at their earliest convenience. The following resolution was unanimously adopted at the sixth annual meeting: "That papers be invited upon the subject of life-saving at sea, for the next annual meeting, and that two such papers be selected by the executive committee for publication and discussion." Members are invited to suggest names of persons outside the society who might be asked to prepare papers on this subject.

NEWS AROUND THE LAKES.

BUFFALO.

Special Correspondence to The Marine Record.

Henry S. Fisher, general agent of the Cleveland & Buffalo line, accompanied by Mrs. Fisher, is expected home from Florida. Mr. and Mrs. Fisher have been in the south for the past month.

The steamer Ed. Smih No. 2 will tow the Connelly fleet consisting of the barges Connelly Bros., Ogarita and Gardner. The fleet will carry over 4,000,000 feet altogether. Lumber will move very early, and stocks east are not as large as usual at present.

Capt. Melancthon Simpson, one of the best known shipbuilders in Canada, died, Tuesday night, at the age of 72. In early manhood he sailed on the lakes, but for a score of years he had been actively engaged in shipbuilding. Pneumonia caused his death. Mr. Simpson's only son, William, lives in this city.

Stewart Murray, general freight and passenger agent of the Northern Steamship Co., states that the steamers of his line will not make a start before May 1st this season. "We look for a late opening," said Mr. Murray, "because old-time mariners and lake men say the lakes are packed with ice. It may seem queer, but we are pleased at the prospect of a late opening."

The committee of the Lake Carriers' Association met in the office of the Merchants' Exchange, on Tuesday morning, to discuss what steps should be taken to secure an alteration in the form of the bill of lading used in connection with transporting grain on the Great Lakes. Later, the committee adjourned to the offices of the Western Elevating Association and carried on its deliberations behind closed doors. Secretary C. H. Keep, of the Merchants' Exchange, announced that the deliberations were secret and nothing would be given out for publication until after action has been taken by the convention, which meets Thursday.

According to Rogers, Brown & Co. the week just passed has been one of unusual activity. Lake Superior charcoal has been the leading feature. Several good-sized contracts for that class of material have been plaeed at full advanced prices. In foundry iron there has been very little offered outside of odd lots and these have been immediately picked up by foundries who have found their increasing sales of castings necessitated further purchases of pig iron. Those foundries who have not fully covered seem to be more interested in placing the contracts where they will be sure of getting the iron, than in saving a few cents per ton as heretofore.

On August 10, 1897, the canal steamer Lady Dimmers lost the boat Niobe in the Erie basin and a valuable cargo of merchandise from New York was badly damaged. In the trial it was proved that the check through which the towline passed in the Niobe pulled out, and that in consequence the cleat holding the line on the Niobe also gave way, thus making the steamer unable to handle her consort. For this reason the libel was dismissed. The suit involved about $7,000. It is said by insurance men that the cause ought to have gone the other way, as the Dimmers was warned that the sea was too high for her to bring the Niobe up from Black Rock, and was asked to take a tug.

Capt. Graham D. Fitch, Corps of Engineers, U. S. A., has been detailed to service at Oswego and assumed charge of the Oswego river and harbor district which, since July 1, last, had been attached to Buffalo with Maj. T. W. Symons in charge. Capt. Fitch, since December last, has been secretary of the Missouri River Commision with headquarters at St. Louis. Previous to December he was in command of a company of engineers and served with it throughout the Santiago campaign and the war with Spain. The captain is a native of Chicago and a graduate of West Point, class of '82. After graduation he served for a year in the Fifth Artillery and was then transferred to the engineer corps.

On fresh as on salt water, also in the Navy as well as the merchant service, the engine room staff don't exactly jibe with the talent on deck. All the sailing fraternity know and understand this, so there's no use spoiling ink by going into any details on the subject. Both ends of a boat ought, must and does go the same way, but there is not unfrequently a little friction. As a remedy for this undesirable condition, the three local organizations—the American Association of Masters and Pilots of Steam Vessels, Harbor No. 41; the Marine Engineers' Benevolent Association No. 1, and the Shipmasters' Association, Buffalo Lodge No. 1 have united on a plan to bring about greater harmony in the three branches of marine work, not only in the chartered organizations, but in the performance of their duties while on the lake. It is mostly a case of trying to mix oil and water though unless the people are level headed enough to know how and when to mix.

A Duluth broker writes: It is altogether likely that before April 1st all the available storage space will be taken. Indeed, one of the elevator systems at the head of the lakes has announced its inability to receive any more grain Another system will be full before the end of next week and there is five million more bushels now in store than there was this time last year. There is every indication that there is a large quantity of grain in the country elevators and in the farmers' hands, so that we confidently hope to have a fairly good market all through the spring and summer. Freight rates may be said to be on a basis of 2¼ cents, wheat. The inquiry for tonnage, however, is very small and is confined entirely to the shippers of coarse grains. The wheat markets are all out of line, and shippers freely express themselves to the effect there will be no business until the bill of lading controversy is settled. The movement of coal at the head of the lakes continues very active, and as stated in our last latter, there will be a shortage in some grades of anthracite. There is much more ice in the harbor than a year ago. The lake is also covered with ice as far as the eye can reach.

DETROIT.

Special Correspondence to The Marine Record.

Capt. Mott, keeper of the St. Clair Flats canal, reports that the ice is all loosening in and around the Flats, and that the present prospects for an early opening in that vicinity are favorable.

The Detroit Graphite Manufacturing Co. state that their output of the Superior graphite paint doubled last year over that of the year before, and they are now constructing a large five-story addition to their factory in order to take care of the rapidly growing trade.

The Detroit and Cleveland line has decided to start its boats between Detroit and Cleveland by March 20, if the ice permits.

Capt. Kileran reports, after survey, that it will cost $6,000 to repair the damage sustained by the steamer George Presley on the Pelee middleground last December. She needs some bottom plank, shoe and keel aft, a rudder and calking.

The wooden steamer George Presley, that was caught in the ice jam at Point Pelee last fall and badly damaged, has left the Detroit dry dock. She was entirely recalked and received a new rudder, besides other extensive repairs. Her coal cargo was discharged and sold at the Stevenson line dock at the foot of Randolph St. The big steel schooner Aurania, which was ashore on Fighting Island at the time, when her consort, the Aurora, was burned, will now occupy one of the dry docks.

On Sept. 17, 1896, Byron Brown, mate of the steamer Nipigon, owned by the Whitney Transportation Co., was killed accidently during the passage of the steamer through the Welland canal. Recently the widow of the deceased instituted suit against the transportation company for damages in the sum of $20,000. When the case was called in court on Monday attorneys announced that a satisfactory settlement had been reached through the payment by the transportation company of $1,000 to Mrs. Brown.

During a snowstorm here on Saturday evening an electric car left the track at the intersection of Sherman St. and the Detroit, Grand Haven & Milwaukee Railway and brought up against a telegraph pole. Capt. Geo E. Merritt was thrown from the back platform, shattering two ribs and bruising him generally about the body and head. He suffered considerable pain, and the doctor in attendance thought it possible that more severe internal injuries may be discovered. Capt. Peter C. Bassett was thrown off with Capt. Merritt and received a thorough shaking up.

The Detroit & Cleveland Navigation Co. expect to start its boats March 20. During the winter the company has made many improvements at its local depot. The ticket office has been rebuilt and now extends to the street. Passengers will be able to purchase tickets without entering the depot. Three boats will do service between Cleveland and Toledo. The boats will be the City of the Straits of the D. & C. line and the State of New York and the State of Ohio of the C. & B. line. All the boats have been thoroughly overhauled and refitted. The two last named will form the night line between here and Toledo and will do day service between Toledo and Put-in-Bay. The City of Toledo will run exclusively between Cleveland and Put-in Bay. Tuesdays and Thursdays of each week a special boat will be run direct to Lakeside from this city. This will be for the benefit of church organizations and others desiring to run excursions to Lakeside. An extra boat will be kept here to be chartered for special trips.

The libel of Edmund Hall, against propeller J. H. Wade is occupying the attention of Judge Swan this week. Mr. Hall is the owner of the tug Protector. In June, 1895, the tug was engaged in towing a raft of short logs through the St. Clair river. When the tow was about a quarter of a mile above the lighthouse, south channel, the officer in charge of the Protector observed that the propeller Wade was bearing down upon the raft, going in the same direction as the tow and at a much more rapid rate of speed. The Protector signaled the propeller to check her speed. The Wade it is claimed, paid no attention to the signals, and when she was in close proximity to the raft the Protector repeated her signals to check. The Wade kept right on coming, and ran into the raft at full speed. The raft was badly broken up and the logs floated out into Lake St. Clair. A great deal of money was spent in trying to pick up the logs. About 250,000 feet was lost. The Protector people claim that there was ample room for the Wade to pass on the starboard side and they assert that the Wade was solely to blame for the accident. The whole amount of the damages claimed is $4,859,72.

THE lockout on the docks of the Flint & Pere Marquette Railway at Ludington, inaugurated by the company several months ago against about 200 union freight handlers has been settled by the State Board of Arbitration. The board decided that the offer made by the company of 15 cents per hour for the five winter months and 20 cents for the remaining seven was a fair one, and as both sides to the controversy had agreed to abide by the board's decision the men resumed their places to-day.

CHICAGO.

Special Correspondence to The Marine Record.

Capt. Donald Duncanson, for a number of seasons past master of the steamer J. H. Farwell, will succeed Capt. J. Quincy Owen in the command of the steel steamer Ira H. Owen.

The steamer Tom Adams, grain laden at Milwaukee, is said to be leaking quite badly because of oakum having been pulled out of her seams by the ice. The cargo has sustained no damage, it is thought.

The survey of the touch-and-go damage of the steamer Topeka was finished Tuesday at Milwaukee. She requires three new bottom planks, straightening and refastening of shoe and considerable calking.

The Crosby Transportation Co. has chartered the steamer E. S. Tice to take the place of the lost J. V. Moran in the Grand Haven line until the rush of winter freighting is ended. The net tonnage of the Tice is but a trifle over half that of the lost steamer.

The Q. & C. Co., Chicago and New York, have issued a catalogue of pneumatic tools for riveting, chipping, calking and other similar operations. The various tools are described in detail, and their mode of operation clearly shown in the fine illustrations.

All of the grain tonnage wintering here is now practically under charter. The rate on corn is 3 cents, as against 2 cents a year ago. A scarcity of room already exists in the elevators. With no more vessels to be had, if anything should start western corn to moving again there would be a blockade, and the warehouse men would be compelled to keep the grain going out regardless of shipping profits.

Fishermen report that there is not a crack in the ice which covers Green Bay. The sheet extends from the mouth of Fox river to Death's Door, a distance of 60 miles, and no openings are to be found anywhere, although in past winters there have always, it is claimed, been two or three open spots of considerable size. This puts an early breakup out of question, and the fishermen expect to remain upon the ice until about April 10th.

An amended answer has been filed in the United States Court at Duluth by the British and Foreign Marine Insurance Co. in the suit of the White Line Towing Co. against the steamer Arthur Orr. The answer charges the towing company with gross negligence in its handling of the cargo from the wrecked steamer Orr, and introduces the loss of the copper that is supposed to have been stolen from the barge Noyes. The answer also claims that the towing company handled the flour very roughly in the work of wrecking the cargo, and thus damaged that part of the cargo to the extent of $8,000. Regarding the copper, the amended answer of the cargo claimants charges that $1,500 worth of copper was either stolen or embezzled after it had been removed from the Orr to the barge Noyes, and the allegation is made that it was so embezzled by men employed by the towing company.

A dispatch from Milwaukee says: Any doubt as to whether the dredge combine, which has been much spoken of recently, had actually been formed has been dissipated. The announcement is made by one of the members of the combine stating that the men interested had held a secret meeting in Milwaukee on Friday night, at which the organization was perfected and officers were elected. The organization will be known as the C. H. Stark Co., of Milwaukee, and eight dredges and seven tugs are under its control. The tugs are as follows: Wauban, M. A. Knapp, Calumet, Milwaukee, Jessie Spaulding, Golden, Godfrey. The companies interested are the Lake Michigan Dredge & Dock Co., of Green Bay, Sheboygan Dredge & Dock Co., and the Dixon Dredge Co., of Racine. The officers of the organization are: President, Conrad Niederman, of Milwaukee; vice president, Frederick Knapp, of Racine; superintendent of dredges, Russell Dixon, of Racine; treasurer, Adolph Bues, of Milwaukee; secretary, C. Trimborn, of Milwaukee. The directors are: Messrs. Knapp, Trimborn, Niederman, Bues and Vogel. The capital stock of the company is $350,000.

SAGINAW.

Special Correspondence to the Marine Record.

The past week of spring-like weather has brought out the ship carpenter and caulker, and the sound of the mallet and iron are heard on all sides, the largest fleet for some years being in winter quarters here. The steam barge Oscoda is receiving new decks and beams and some repairs to motive power. Our Son is getting entire new decks, frames and bulwarks; the Ida Corning a general overhauling.

The steam barge Maine which was burned at Tonawanda last spring, is being entirely rebuilt, and when she comes out will be practically as good as new. The barge Exile which was dismasted last fall, is receivig new spars, beams and decks. Jas. Shannon the owner, is also building a new pile driver and dredge combined.

Vessel owners generally are much pleased with out Congressman elect, who secured $40,000 for Saginaw river, $15,000 more than the engineer corps estimated. Major Symonds was in the city last week, visiting his brother. F. W. Wheeler and states that the want of material is all that bothers him just now. A new bridge at Court street just finished and one at Bristol and one at Genesee avenue will make things hum for a while on our river front.

Capt. D. H. Mallory, formerly on the steamer G. G. Hadley, has been appointed to command the steamer Pathfinder.

CLEVELAND.

Special Correspondence to The Marine Record.

Capt. James Stone, the supervising inspector of steam vessels for the Lake Erie and Lake Ontario district, has moved his headquarters from Buffalo to Cleveland.

Engineer Clark Ford, of the steamer John B. Ketcham, arrived in the city this week from Muskegon to fit out the Ketcham. The captain of the Ketcham, Martin Christy, is also here.

Capt. W. W. Brown has resigned his position as secretary and manager of the Shipowners' Dry Dock Co. Capt. Brown will be located in the New England building and will deal in stocks and securities.

Car ferry Shenango No. 1, which had been fast in the ice off Port Burwell for several days reached port safely. The ice in the lake is shifting about and the boat suffered no serious effects from her freeze in.

The season contract rate on ore from the head of Lake Superior to Lake Erie ports has been advanced to 65 cents. Pickands, Mather & Co. have takeu several boats at the new rate and there don't seem to be any great rush for the ore at the advance. Vessel owners simply closed too early on the lower season rate, and 70 cents instead of 60 cents would now be asked by a number that chartered at the lower rate.

W. H. Head, of this city, steward of the schooner David Wallace, which was wrecked on the coast Dec. 22, reached home yesterday. The Wallace was one of the vessels chartered by the Atlantic Transportation Co., of New York, and was taken to the coast last fall. The Wallace was wrecked at Shelburne, N. S. She carried a crew of eight men, and they were all picked up by a fishing schooner. The vessel was owned by the Wallaces, of Lorain, and others.

The Security Title & Trust Co., as receiver of the Turney & Jones Co., has filed a petition in the United States Court to learn the court's desire in regard to the future of the company. The company has a lease on docks at Sandusky, and asks permission to either use them or sell the Congo mines. If the mines are to be worked the receiver asks $250,000 working capital, $90,000 of which is on hand. The court will hear suggestions from creditors on March 14 as to what shall be done.

H. A. Hawgood has been down to the seaboard investigating conditions, and has returned convinced that there is money in it for lake carriers on the coast. He will organize two tows of large vessels to go into the coal trade between Newport News and New York and eastern points. The rates are high, and there is plenty of business in sight, so there is no reason why the boats should not make money. The schooner Moravia and the B. L. Pennington, of Cleveland, will be in the two, and perhaps the J. H. Rutter, of this port will be sent down.

The second steamer of the new National Transportation Co.'s fleet will be named Texas. She will be some twenty-four feet longer than the Pennsylvania, and will undoubtedly carry a larger cargo. She will be no larger than the Rockefeller steamers of the Morse type, but her cargo will exceed 8,000 net tons. The Texas is to be ready for service early in October next. The stockholders of the National Steamship Co. are largely the same as those of Zenith Transit Co., controlling other vessels of the Wolvin fleet, but there is enough difference to necessitate a change of corporation.

A meeting of representatives of the various shipbuilding yards on the Great Lakes was held in Cleveland, yesterday, for the purpose of considering the proposed plan of consolidation. The gentlemen present were not willing to talk about the result of their day's work, but it is understood that they did not make very much progress. The fundamental idea of a consolidation was agreed to by all parties, but upon many important details there was a wide difference of opinion. The statements presented by expert valuators, purporting to show the worth of each yard, were not acceptable to any one.

Vesselmen have devoted three days of this week to the meeting in Buffalo, which was called for the purpose of endeavoring to secure a revision of the grain bill of lading. There are two important points involved, the shortage on cargoes and the delay in unloading at Buffalo. On the first of these questions there is no doubt that the vesselmen will be very insistent. They have become very tired of paying for grain which was never put on the boat, and they will no longer cosent to be responsible for a greater shortage than a half bushel per thousand. In the matter of unloading it is said that vesselmen are willing to compromise. They want to make agreements calling for the unloadlng to begin within twenty-four hours of the vessel's arrival at Buffalo, but they recognize that it is difficult to avoid the annual rush at the close of the season, and they feel that during the last few weeks of the year it will be practically necessary to let the elevators control the situation.

AT a mass meeting of miners held at Ishpeming on Saturday night to discuss the wage question, as the result of an unsatisfactory advance granted the employes March 1, it was decided that another demand for not less than 15 per cent. be made. The communication bearing the demand was sent to the mine officials to-day with the request that a reply be given within 5 days. It is asserted by miners who attended last night's meeting that there will likely be trouble if the demand is not granted. It is generally supposed that the mine managers will ignore the communication.

PORT HURON.

Special Correspondence to The Marine Record.

St. Clair river was filled with running ice on Thursday afternoon.

The steamer Mary is now making regular trips between Port Huron and Algonac.

Extensive repairs are being made on the small schooner Jessie Martin at Manitowoc.

H. E. Runnels has sold the barge Dunford to Capt. Campbell, late of the barge Magnet.

The tug Favorite sprung a leak and went to the bottom in the upper part of the river yesterday.

The small tug O. M. Field has been taken to Muskegon from Grand Haven for the repair of a leak.

The steamer Porter Chamberlain has been sold by Churchill Bros. to Capt. McClarity, of Detroit.

Capt. Thomas Currie and wife have spent the past week visiting friends in Algonac and Marine City.

George Smith, of Marine City, has been appointed clerk of the steamer Mary, to succeed Spain E. Pearce.

The shipmasters will hold the fifth party of their series in their rooms in the Jenkinson block, on Thursday evening.

A large number of engineers, masters and pilots are taking their annual examination before the vessel inspectors at this port.

The schooner L. S. Hammond has been sold to the Ogdensburg Coal and Towing Co. She will be converted into a towbarge for coal-carrying on Lake Ontario.

During the coming summer the boats of the Detroit & Cleveland line, bound up, will leave Port Huron at 10:30 in the evening instead of in the morning as heretofore.

No effort has been made to raise the little tug Lizzie which recently sunk at the dock in the rear of the St. Clair County Savings Bank. The ice will soon be moving out of the river and is liable to take the tug with it.

The heavy southeast wind of Sunday night cansed the ice in Lake Huron to shift to the west shore. Every dock between Lexington and Sand Beach was damaged. The damage to Sheldon's dock at Lexington Beach reached $1,500.

George Uhler, national president of the Marine Engineers' Association, delivered an address at an open meeting held by the Port Huron Association Saturday evening. There was a large attendance and the address was thoroughly appreciated.

Capt. Thomas Currie says the indications are that the coming season will be an excellent one for owners of small vessels. He says there is already a demand for small barges and that a number of Detroit men have spent a portion of the week in Port Huron trying to purchase such boats.

A very pleasant surprise was tendered Capt. and Mrs. W. H. Buzzard at their home, 717 Huron Street, on Saturday evening, it being the 20th anniversary of their marriage. A very pleasant evening was enjoyed by all. Mr. and Mrs. Buzzard received some very pretty and useful pieces of china. Supper was served at 9:30 o'clock.

A Port Huron vessel owner spent two days at Chicago this week posting himself regarding the outlook for lumber freights. Things have undergone a remarkable change since a year ago at this time, he says. Then the receivers of lumber manifested a disinclination to talk to carriers, whereas now they seem to have an abundance of time for the discussion of the situation and give out information which they possess with surprising readiness. A very large amount of lumber is to be carried to Chicago from the head of Lake Superior and suitable carriers will find employment throughout the season at improved rates. Several season engagements have been made at $2 per 1,000 feet, and one, where the lumber is to be delivered upon a dock just inside of the harbor, for a trifle less than that figure.

BAY CITY.

Special Correspondence to The Marine Record.

Pres. Uhler, of M. E. B. A., gave the boys a talk Saturday night.

The Marine Iron Works are building the engine for the tug Tromley.

The steam barge Lizzie Madden is receiving new decks, beams and steel arches.

The National Boiler Works are building a Scotch boiler for the tug Josie Tromley.

The steam barge J. P. Donaldson is putting in a new boiler and receiving a general overhauling.

Tug Argyle is being entirely rebuilt. Schooners North West and Red, White and Blue are receiving new stern and other repairs.

McLean & Bridges have closed a contract for the A. A. Turner and tow from Duluth to Saginaw for the season. Luber goes to W. B. Merchon & Co.

Two fine schooners are well under way at Davidson's yard. Dimensions are, 327 feet keel; 45 feet beam; 20 feet mold; with a carrying capacity of 4,500 tons. Mr. Davidson is also building a powerful ice breaker tug 120 by 24 feet, with largest power of any tug of similar size here on the lakes. The captain's experience last fall started the ice breaker Icka.

Capt. Riley Burrington is kept busy nowadays waiting on the boys at his "winter quarters," where most of the captains and engineers hold forth at checkers, dominoes, etc. A barrel of cider, just donated, keeps things damp.

FLOTSAM, JETSAM AND LAGAN.

The tug Annie, owned by the American Transportation Co., and the largest tug in Fairport harbor, sank on Tuesday afternoon and now lies in 27 feet of water. The tug was tied up for the winter and sprung a leak.

An appropriation of $15,000 for a wind signal station on South Manitou and telegraph cable connection with the mainland was killed in conference committee after a long and sharp discussion. This enforces a delay of the much needed improvement for another year.

The steel steamer Arthur Orr, now in dry dock at West Superior, was pulled apart 47 feet 11 inches on Wednesday in two hours' time. A steam windlass performed the work without a hitch. The keel length of the Orr will thus be increased from 286 feet to 333 feet 11 inches, and her carrying capacity proportionately.

The appropriation of $12,000 for dredging Milwaukee harbor to a depth of 21 feet, which Senator Mitchell had incorporated in the bill after it reached the Senate, has been stricken out, and a year or two must elapse before this much needed work can be done. According to dispatches all of the Senate amendments to the bill were either rejected or compromised.

Thacher & Shirley, of Toledo, are notified that they have been awarded the contract for lowering the water main at Superior, Wis., from its present depth, 18 feet, to below the 21-foot mark, to conform with the requirements of the United States government, so that boats will not strike the pipe. The main extends three miles into the lake. It is a 36-inch main. The work will be commenced some time in April.

As a result of their dealings with the Atlantic Transportation Co., of New York, vessel men of the lakes have learned something of the coal business on the Atlantic coast between Newort News, New York and Boston, and it would not be surprising to learn of a pooling of interests on the part of owners whose vessels were left in Nova Scotia when the Atlantic company failed. A plan now outlined is to form one strong company, putting several of these vessels and possibly others from the lakes into it, and then send a manager from the lakes to Boston or New York. It is reported that $1.80 a ton is now offered on coal from Newport News to Boston, and this high freight prompts the belief that a profitable trade will be found on the coast for a large number of the medium class of lake vessels for some time to come. The coast shipyards are, of course, crowded just as the lake yards are taxed to their fullest capacity for more than a year. Capt. John Mitchell, of Cleveland, and Capt. Ben Boutell, of Bay City, Mich., are now in Boston. Capt. Boutell has tugs to sell or charter that could readily be sent to the coast in the spring. Capt. Mitchell is looking after the schooner Fitzpatrick, one of the vessels chartered to the Atlantic company, but for which the Pocahontas coal interests and other coal concerns are now figuring at prices much higher than the figure named in the charter to the Atlantic company. While in the east these two lake vessel owners will give thought to the plan of forming a new company in New York or Boston, for the operation of quite a large fleet from the lakes, and if their investigations warrant it, will take the matter up immediately upon their return.

COAST SIHPBUILDING.

The Jackson & Sharp Co., Wilmington, Del., has received the contract for the construction of a wooden-hull tugboat for parties in New York. She will be first-class in every particular and will be 84 feet in length. The lumber for the vessel will arrive in a few days, and the work will be started as soon as the weather will permit. The launch of the large car float building for the Chesapeake & Ohio Rrailroad for use at Norfolk, Va., will take place about March 15th. One of the hulls for the elevators, which will be built for New York parties, is in frame, and the framework for the other elevator is being placed in shape.

H. M. Bean, Camden, N. J., has signed a contract to build a five-masted keel schooner for Capt. J. R. Potter, of New York, and work will commence on her as soon as the four-masted one, now being built for Capt. Clarence Birdsall, of Tom's river, New Jersey, is launched, which will be early in June. The five-master will be 240 feet long, 44 feet beam and 21 feet deep, and will carry about 3500 tons. She will have all the modern improvements. The hard pine for the one now building will arrive the first of March and work will then be pushed with all possible speed. The five-master will be built on the same stocks as the present one is on, and will be launched the last of October.

Peter Magee, of Athens, N. Y., has the contract to build a tugboat 95 feet long, 21½ feet beam, and 10 feet depth of hold, for C. E. Evans & Co., of New York city.

The Fore River Engine Co. is busy on the two new torpedo boats. The firm has contracted to build a fast steam yacht for Commodore Benjamin P. Cheney, of the Boston Yacht Club. Commodore Cheney and his wife will enjoy the coming season on short cruises along the shore. The firm is also building a triple-expansion engine for J. Rodger Maxwell's new steel steam yacht, now building at Pusey & Jones', Wilmington, Del.

George E. Currier, Newburyport, Mass., is negotiating with parties for the construction of a 400-ton schooner, and B. H. Hussey is also figuring on one of 1,000 tons, which would give decided impetus.

LAKE SUPERIOR ORE DOCKS.

The work on the ore docks at Two Harbors, West Duluth and Allouez Bay is pushed with great energy. The increased ore dock capacity at the head of the lake will, it is felt, add greatly to the sum total of iron ore shipments from St. Louis county at the end of the coming season of navigation.

At Two Harbors the Barnett & Record Co. has completed the demolition of the old No. 1 dock, the first iron ore shipping dock ever built in Minnesota. The preparation for building the foundations of the new dock are well under way, and the earth work for the new and enlarged approach is rushed by Contractor Runquist and a large force of men and teams.

Considerable dredging will be necessary on the western side of the dock to enable vessels to load at the twenty-six pockets nearest the shore. This work can not be begun until after the opening of navigation, and necessitates taking the utmost care with the shore end of the dock foundation.

At West Duluth the same contractors are rushing the work on the extension of No. 2 dock. The piling for the foundation is nearly all driven, and a large quantity of the timber is already framed and ready to go into the work.

Over at Allouez Bay the Great Northern road is making extensive alterations and repairs to the ore dock. The older part, near the shore, is far too low for the loading of the modern type of ore carrier, and will be raised this winter to correspond with the newer part beyond it. This will necessitate an elevation of the long approach to the dock, and this work is doing by the company. The raising of the dock will be done by the Barnett & Record Co., which has received a contract from the company for the work.

The successful raising of a completed ore dock was first accomplished by Chief Engineer Angst of the Duluth & Iron Range. The plan pursued was simple but ingenious. The posts of the first bent were sawed through and raised as much as the spring of the string pieces would allow. Then the next bent was cut and raised in the same manner. The first one was blocked up, and so on for the whole length of the dock. Then the work of raising and blocking up one bent after another was pursued, always starting from the point of beginning. Thus the whole immense fabric was gradually raised to the desired height and held there. Not a timber was broken, nor was the iron work of the pockets strained or buckled in the least, and the dock stands to-day as a monument of engineering skill and practical ingenuity.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

The total addition of steam tonnage during the year has been 1,111,768 tons gross; and of sailing tonnage, 29,053 tons gross; or, in all, 1,140,821 tons gross. So large an addition of steam tonnage has not been recorded in any previous year.

About 90 per cent. of the tonnage added to the Register consists of new vessels, not one of which has been built abroad. The largest items among the other additions to the Register are those of vessels transferred from British colonies and from foreign countries to the United Kingdom. These together amount to 97,920 tons, or less than 9 per cent. of the total.

The gross deduction of steam tonnage from the Register amounts to 696,660 tons; and of sailing tonnage, to 234,868 tons; or, in all, to 931,528 tons. About 33 per cent. of the steam tonnage and 32 per cent. of the sailing tonnage, included in these figures, have been removed on account of loss, breaking up, dismantling, etc. It should be noted that in the returns of the Registrar-General of shipping, wrecks, etc., are included according to the months in which they were respectively reported, and not, as in Lloyd's Register wreck returns, according to the dates at which they occurred.

The tonnage transferred to foreigners during 1898 reaches the large total of 588,508 tons, exceeding the similar figures for 1895, 1896 and 1897 by 229,371 tons, 249,233 tons and 200,714 tons, respectively. The steam tonnage which has been deducted on this account amounts to no less than 434,725 tons, and the sailing tonnage to 153,783 tons, or about 62 and 65 per cent. respectively, of the total deductions in each case. In the main, the vessels which are transferred to foreigners are not of very recent construction. Tables which are included in the Registrar-General's returns indicate that more than half the tonnage removed from the Register because of foreign transfer had been built before 1885, and more than two-thirds before 1890. During 1898, the United States of America and Norway have been the largest purchasers. The United States have acquired from the United Kingdom 42 vessels of 118,957 tons; and Norway has acquired 113 vessels of 109,885 tons. Among other principal purchasers may be mentioned Germany, 74,812 tons; Italy, 66,438 tons; Sweden, 47,173 tons; France, 26,706 tons, and Austria-Hungary, 22,336 tons. In addition, 37,285 tons have been transferred to the British Colonies. It will be understood that new vessels built in the United Kingdom directly for colonial and foreign owners are not included in these returns.

On the whole, during 1898, the steamers on the Official Register of the United Kingdom have increased by 245 vessels, and 415,108 tons, while sailing vessels have decreased by 344 vessels, and 205,815 tons. The total number of vessels on the Register has, therefore, decreased by 99, and the total tonnage has increased by 209,293 tons during the year.

During 1899, 47 steamers of over 5,000 tons each have been classed as compared with 24 during 1897, 31 during 1896, and 17 during 1895. Of these 47, seven belong to Germany; five to Japan; one to Russia; one to Holland; and the remainder to the United Kingdom. One of 6,172 tons, it may be noted, was built in Japan. The largest steamers included in the return are the Rotterdam, 8,802 tons; Ultonia, 8,056 tons; Monmouth, 8,001 tons, and Arabia, 7,903 tons. Four sailing vessels of over 2,500 tons have been classed in 1898. These are the Quevilly, 3,482 tons; Ernest Siegfried, 3,214 tons; Europe, 2,957 tons, and Asie, 2,954 tons, which have all been built in France. The largest sailing vessel built in the United Kingdom, which was classed during 1898, is the Inverclyde, 1,634 tons.

Of the tonnage classed during the year, 1,075,047 tons, or 94 per cent. have been built in the United Kingdom. Among foreign countries, Germany and France contribute the largest amount of tonnage.

The return includes a statement showing the countries for which the vessels have been built. 837,183 tons, or 74 per cent. have been built for the United Kingdom, and 301,392 tons, or 26 per cent. for other countries. Germany leads with 55,045 tons; Denmark has 47,672 tons; Japan, 44,273 tons; Holland, 26,844 tons; Russia, 25,815 tons, and Norway, 24,768 tons.

CAR FERRY LINE STOPPED.

The Michigan & Ohio Car Ferry Co., as operated by E. H. Moreton last season between Sandusky and Detroit has ceased the traffic. The company handled frieght for the Baltimore & Ohio Railway Co., consigned to Michigan points, but Mr. Moreton says they lost money owing to the fact that their barges had a carrying capacity of only eight cars, whereas they had business enough for two 28-car boats. This, the manager explains, was because the bulk of the freight handled was coal, and while business on the trip was good, the boats didn't carry enough freight back to Sandusky to pay for the coal consumed by the tug used to tow the barges, as the merchandise offered at Detroit for shipment could not be carried in empty coal cars and had to be refused.

Efforts are being made to reorganize and put two 28-car barges on the line, in which event the company will be enabled to carry other freight from Sandusky to Detroit besides coal, and will thus have plenty of box cars to handle the freight for the down trip that may be offered them at Detroit.

The Wisconsin & Michigan railway, which operated a line of ferries between South Chicago and Peshtigo, has been negotiating with the Baltimore & Ohio. They have two barges with a carrying capacity of 28 cars each, and if satisfactory arrangements are terminated their boats may be placed on the route. However, the terminals at both Detroit and Sandusky are controlled by Mr. Moreton's company, and if the plan goes through, the line may still be operated under the supervision of the Michigan & Ohio Car Ferry Co.

Mr. Moreton says switching charges at Detroit were a heavy item of expense, and several suits were filed in the courts against his boats, for the collection of claims. He also alleges that his company was discriminated against in the matter of these switching charges by the Michigan Central and Wabash railroads at Detroit, and says he has a case pending against them before the interstate commerce commission, his complaint being similar to the one made by the Detroit & Lima Northern road against the Michigan Central.

APPOINTMENTS OF MASTERS AND ENGINEERS.

R. R. RHODES, CLEVELAND, O.—Steamer Yale, master, John Coulton; engineer, Harry Stone. Neshoto, master, P. Dowdell; engineer, Henry Stone. R. R. Rhodes, master, W. Moore.

CAPT. JOHN JENKINS, MARINE CITY, MICH.—Steamer W. H. Sawyer, master, John Jenkins; engineer, Nelson Gulette. C. E. Redfern, master, Wyman Powers. A. C. Tuxbury, master, J. C. Angell.

THE LAKE SUPERIOR IRON CO., CLEVELAND, O.—Steamer La Salle, master, Wm. Ames; engineer, Frank Steadley. Joliet, master, Chas. Winslea; engineer, F. B. Smith. Wawatam, master, Edward Mooney; engineer, A. E. Bury. Grffin, master, Keary Peterson; engineer, Martin Mitchell. Audaste, master, Emil Detlefs; engineer, Wm. M. Kennedy. Choctaw, master, Benson Fox; engineer, C. E. Walsh.

THE REPUBLIC IRON CO., CLEVELAND, O.—Steamer Republic, master, E. T. Rattray; engineer, Wm. Lowe. Specular, master, Wm. Megarvey; engineer, John Smith. Continental, master, Harry Rogers; engineer, McGregor. Magnetic, master, W. A. Blach; Grace Holland, master B. M. Landfair.

THE KELLY ISLAND LIME & TRANSP. CO., CLEVELAND, O.—Steamer, Albert Y. Gowen, master, C. Smith; engineer, C. C. Smith.

D. C. WHITNEY, DETROIT, MICH.—Steamer E. W. Oglebay, master, W. H. Hutcheson; engineer, Edw. Egan. Merida, master, John Ivers; engineer, Jas. Balfour. Mecosta, master, A. C. May; engineer, Geo. Francomb. D. C. Whitney, master, Thos. Brady; engineer, Chas. Murett. Lansing, master, Chas. Miner; engineer, Jos. Coveyeau. Nipigon, master, Edw. July; engineer, Chas. Francomb. Barge Ashland, master, Geo. Dennis; Melbourne, master, Geo Cooper.

THE VULCAN TRANSP. CO., DETROIT, MICH.—Propeller Forest City, master, Joseph Sanders; engineer, Louis N. Peck. R. J. Hackett, master, Thos. H. Sanders; engineer, Wm. McKittrick.

ALGER SMITH & CO., DETROIT, MICH.—Propeller Gettysburg, master, S. H. Currie; engineer, W. P. Wenner.

ASHLEY & DUSTIN, DETROIT, MICH.—Steamer Frank E. Kirby, master, A. J. Fox; engineer, E. Perry. Wyandotte, master, not appointed; engineer, J. Holder.

R. T. GRAY, DETROIT, MICH.—Steamer John Owen, master, E. F. Thorp; engineer, S. L. Phillips. J. Emory Owen, master, F. C. Hart; engineer, Thos. McDonough; Michigan, master, F. L. Chalcraft.

LAKE MICH. & LAKE SUPERIOR TRANSP. CO., CHICAGO, ILL.—Steamer Manitou, master, Allan McIntyre; engineer, R. L. Peck. Peerless, master, H. C. Page; engineer, John R. Bennett. City of Traverse, master, John M. Twichell; engineer, Ed. Meek. Jay Gould, master, Charles Wilson; engineer, D. N. Robertson.

THE ST. LAWRENCE & CHICAGO STEAM NAVIGATION CO., TORONTO, ONT.—Steamer Algonquin, master, James McMaugh; engineer, James H. Ellis. Rosedale, master, James Ewart; engineer, E. O'Dell.

PICKANDS, MATHER & CO., MGRS., MINNESOTA STEAMSHIP CO., CLEVELAND, O.—Steamer Manola, master, A. P. Chambers; engineer D. A. Black. Mariska, master, F. A. Bailey; engineer, David Burns. Maruba, master, F. J. Crowley; engineer, John Dupont; Matoa, master, C. H. Cummings; engineer, W. W. Tyler. Marina, master, J. W. Morgan; engineer, W. A. Maddaugh. Masaba, master, A. H. Reed; engineer, A. L. Wilcox. Maritana, master, C. H. Bassett; engineer, Geo. Arnold. Mariposa, master, H. Zealand; engineer, F. A. Smith. Maricopa, master, F. D. Root; engineer, B. F. McCanna. New steamer, master, G. B. Mallory; engineer, P. J. June. Malta, master, John Nahrstedt; Marcia, master, A. G. Tappan; Manda, master, W. C. Chilson; Martha, master, E. A. Hill; Magna, master, H. Culp; Maida, master, M. K. Chamberlain; Maia, master, John Collins; New schooner, master, A. J. Talbot.

PICKANDS, MATHER & CO., MGRS., HURON BARGE CO., CLEVELAND, O.—Steamer Pathfinder, master, D. H. Mallory; engineer, C. A. Heisner. Sagamore, master, E. C. Joiner.

PICKANDS, MATHER & CO., MGRS., INTER LAKE CO., CLEVELAND, O.—Steamer Kearsarge, master, Robert McDowell; engineer, Louis Sebastian. Victory, master, Fred. Hoffman; engineer, Theo. Trieleaven. Constitution, master, William Holly; Clarence Black, master, W. B. McGregor; engineer, John Hegemer.

AMERICAN STEEL BARGE CO., WEST SUPERIOR, WIS.—Steamer Colgate Hoyt, master, Neil Campbell; engineer, Gilbert Patterson. J. L. Colby, master, Carl D. Secord; engineer, William Densmore. E. B. Bartlett, master, M. C.

Cameron; engineer, J. J. Norcross. A. D. Johnson, master, C. L. Sawyer; engineer, John McLaughlin. Thos. Wilson, master, Robert Jones; engineer, A. J. Smith. Samuel Mather, master, John Parke; engineer, A. M. Kenzie. Jas. B. Colgate, master, Chas. J. Grant; engineer, Herman Folkert. John B. Trevor, master, John Dunn; engineer, Walter Harsant. F. Rockefeller, master, M. A. Boyce; engineer, J. H. Pierce. A. McDougall, master, W. H. Kilby; engineer, Irwin Marshall. The following have been made masters of barges: C. H. Noble, A. A. Boyce, R. W. Gleason, Robert Thompson, Samuel Durfey, Louis Leonard, Robert Brooks, E. Emamuelson, Jas. Burr, H. Harris, Jr., Willard Duncan, J. W. Norcross, Ed. Morey, Dan McFadyen, A. G. McLeod, John Sprowell, Chas. Mulholland, Geo. Gallant, A. Siljauder, W. H. Dick.

THE MCLACHLAN TRANSP. CO., PORT HURON, MICH.—Steamer Kittie M. Forbes, master, James W. Montgomery; engineer, Robert Dorn. Schooner Mary E. McLachlan, master, George B. Fuller.

W. E. RICE, PORT HURON, MICH.—Steamer Rhoda Stewart, master, Wm. J. Cowles; engineer, Jas. A. Southgate. Barge Wm. Brake, master, Fred. Kirker; Magnet, master Geo. J. Bennett.

THE UNION STEAMBOAT CO., BUFFALO, N. Y.—Steamer Starrucca, master, Walter Robinson; engineer, Alex. A. Brown. Ramapo, master, Jas. H. McDonald; engineer, Henry C. Jordan. Chemung, master, Frank B. Huyck, engineer, Geo. Fritsche. Owego, master, John Byrne; engineer, Reynolds Hill. Tioga, master, John Wulke; engineer, Albert Simpson. H. J. Jewett, master, John Dugan; engineer, Chas. Conshaine. Rochester, master, Geo. T. Morris; engineer, Nelson Johnson. New York, master, Patrick O'Neill; engineer, John Caul.

THE NORTH WEST TRANSP. CO., SARNIA, ONT.—Steamer United Empire, master, M. McNab; engineer, S. Brisbin. Monarch, master, E. Robertson; engineer, E. W. McKean.

THE NORTHWESTERN TRANSP. CO., DETROIT, MICH.—Steamer H. H. Brown, master, D. Girardin; engineer, John H. Hand. Fayette Brown, master, Jos. A. Powell; engineer, Nicklas Anderson. S. R. Kirby, master, John F. Jones; engineer, William Watts. E. M. Peck, master, A. C. Callam; engineer, William Brake. Barge G. E. Hartnell, master, C. L. Allen.

THE ROBY TRANSP. CO., DETROIT, MICH.—Steamer L. C. Waldo, master, John W. Duddleson; engineer, N. E. Allen.

BUCKEYE STEAMSHIP CO., C. L. HUTCHINSON MGR., CLEVELAND, O.—Steamer City of Glasgow, master, John McNeff; engineer, C. R. Price.

J. T. HUTCHINSON.—Steamer Germanic, master, M. H. Place; engineer, J. S. Thome. Rube Richards, master' Robert Kerr; engineer, J. C. Johnson. Queen of the West' master, C. J. DeBeau; engineer, Geo. Blauvelt. Schooner E. C. Hutchinson, master, T. K. Woodward; May Richards, master, John Martin.

THE WILLIAMS TRANSP. CO., SOUTH HAVEN, MICH.—Propeller H. W. Williams, master, Frank Swails; engineer, Perry Knaggs. City of Kalamazoo, master, David Morris; engineer, Chas. La Bounty. Glenn, master not appointed; engineer, Ralph Peterson.

M. SICKEN, MARINE CITY, MICH.—Steamer Geo. King, master, Wm. Burns; engineer, M. Owen. S. K. Martin, master, Chas. Kobel; engineer, Frank Oullette. M. Sicken, master, John Kuhn; engineer, Wm. Sicken. Schooner Teutonia, master, H. Lawrence; Thos. Gawn, master, J. Lawrence. Barge Grace Whitney, master, J. Lorenzen; Melvina, master, H. Larsen; C. Spademan, master, G. Gullett; L. Rawson, master, Jas. Kobel; St. Joseph, master not appointed; E. J. McVea, master, J. Chartran.

WM. DULAC, MT. CLEMENS, MICH.—Steamer F. R. Buell, master, C. W. Woodgrift; engineer, John Deihl. Canisteo, master, Ed. Hendricks; engineer not appointed. A. Weston, master, D. McKinzie; engineer, Ed. Cottrell. C. A. Street, master, T. J. Carlisle; engineer, Wm. Hogen. Barge J. Godfrey, master, J. B. Lozen; J. B. Lozen, master, Ed. Moore; A. Stewart, master, Noah Furton; S. B. Pomeroy, master, Wm. Campau; Eleanor, master, Frank Dubay; Jennette, master, Wm. Dubay: Fulton, master, Frank Laforge; Elvina, master, Eli Furton.

HOPKINS STEAMSHIP CO., ST. CLAIR, MICH.—Steamer Centurion, master D. Hutcheson; engineer, Thos. Welch.

THE NORTH SHORE NAV. CO., COLLINGWOOD, ONT.—Steamer City of Collingwood, master, W. J. Bassett; engineer, Chas. Robertson. City of Midland, master, F. X. La France; engineer, Wm. Whipps. City of Toronto, master, John O'Donnell; engineer, D. McQuade. City of Parry Sound, master, Ernest Walton; engineer, J. L. Smith. City of London, master, W. N. Storey; engineer, Jas. Crassland.

W. H. LOUTIT, GRAND HAVEN, MICH.—Steamer Pentland, master, Thos. McCambridge; engineer, C. Ball.

THE STEVENSON LINE, DETROIT, MICH.—Steamer C. H. Stark, master, Wm. Crosby; engineer, J. Lody. Miami, master, H. Henper; engineer, John Elsey. J. H. Paney, master, Geo. Ferguson; engineer, M. Roach. Bessie, master, Wm. Joark; engineer, H. Bugner. Hattie, master, Nat Stewart; engineer, E. Morrison.

MATHEWS LINE, TORONTO, ONT.—Steamer Niagara, master, J. Morgan; engineer, Wm. McCauley. Clinton, master, J. Fahey; engineer, J. Donaldson. Barge Lisgan, master, R. Freeland; Grimsby, master, Hy Brooks. Schooner Emerald, master, J. Joyce; Clara Youell, master not appointed.

THE WESTERN LINE, BUFFALO, N. Y,—Steamer Arabia, master, John Davis; engineer, Frank Miller. Buffalo, master, Edward Roberts; engineer, Wm. McNulty. Boston, master, S. R. Jones; engineer, Patrick Welch. Chicago, master, F. J. McCabe; engineer, Wm. Tibby. Commodore, master, T. Slattery; engineer, James Brooks. Hudson, master, A. J. McDonald; engineer, Moses Tronton. Mohawk, master, Robt. Murray; engineer, M. J. Laney. Montana, master, Henry Murphy; engineer, James Walker. Syracuse, master, John Fisher; engineer, John Mark. Troy, master, D. Gillie; engineer, Henry Hess. Vanderbilt, master, F. D. Osborn; engineer, Fred Hale. Milwaukee, master, M. Foland; engineer, John Raney.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	1,549,000	54,000	5,000	25,000	598,000
Chicago	4,359,000	11,311,000	1,511,000	465,000	820,000
Detroit	301,000	464,000	2,000	15,000	3,000
Duluth and Superior	7,876,000	4,606,000	1,804,000	265,000	426,000
Milwaukee	44,000	.....	1,000	3,000	138,000
Montreal	23,000	17,000	287,000	3,000	7,000
Oswego	.....	119,000	.....	.....	50,000
Toledo	496,000	1,173,000	77,000	2,000	.....
Toronto	75,000	.....	17,000	.....	21,000
Grand Total	29,477,000	33,332,000	10,023,000	1,542,000	2,563,000
Corresponding Date, 1897	33,012,000	41,471,000	13,163,000	3,576,000	1,901,000
Increase	.....	1,511,000	654,000	38,000	.....
Decrease	443,000	.....	.....	.....	111,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

THE CANADIAN "SOO" CANAL.

The Sault Ste. Marie News states that the Canadian ship canal will be popular with vesselmen the coming season, and will be more largely used by them than before. This is a result of the removal of the railway swing bridge pier, which has been an obstruction to navigation ever since the canal has been in commission. Work of building a full swing bridge 408 feet long is now in progress, and the pier will be taken out by the opening of navigation. The cost of the work will approximate $70,000. The approaches to the canal, above and below, are to be widened this season, and with the taking out of the old bridge and pier the Canadian waterway will be in the best possible condition to handle traffic safely and expeditiously. There will be no occasion for further complaint on the part of marine men.

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, in their weekly freight report to the RECORD, state as follows:

We report some further charters for grain to Cork f. o. at 3s. 3d., but carrying privilege of Scandinavian ports at the same figure, without which latter fixtures cannot readily be effected. The demand for large vessels to picked ports is not any more so urgent, as berth rates for liners continue very dull and without any visible prospects of a change for the better. The demand for steamers for general purposes shows no improvement, although we look forward to increased fixtures for timber business from the Gulf ports, where owners are gradually falling in with the lower terms advanced by charterers, based on the present demoralization of general cargo and grain rates from that quarter.

We have nothing of importance to add to our last week's remarks concerning sail tonnage, as the market is sustained by scarcity of vessels, and rates in consequence remain firm.

NOTES.

ENCOURAGED by the success of other Italian shipbuilding yards, an ex-state engineer of naval construction, M. Manaira, and Messrs. Hofee & Co., financiers of Genoa, have combined to establish a shipbuilding yard in the Gulf of Spezzia. Four thousand workmen are now employed, and it is reported that the works are crowded with orders.

THE movement toward industrial combinations is well known to be progressing at a phenomenal rate. It is probable, however, that the magnitude of the aggregate capitalization of such concerns, especially since the first of the year, is not generally appreciated. A conservative table has been prepared by a financial authority which shows that forty-three trusts which were formed in January and February of this year, had an authorized capital stock amounting to $1,048,800,000 and bonds amounting to $57,500,000, a total of $1,106,300.00. The movement is progressing, therefore, at the rate of more than $6,000,000,000 a year. The combinations of 1898 aggregated about $916,000,000.

AT a special meeting of the stockholders of William Cramp & Sons Ship and Engine Building Co., at Philadelphia, on February 21, it decided to issue first mortgage gold bonds to the amount of $1,500,000 maturing in 30 years, with a sinking fund to redeem $25,000 of bonds per year. There were 35,000 shares represented at the meeting, and the proposition to issue the bonds was adopted by a practically unanimous vote. The issuance of the bonds was made upon the recommendation of the board of directors, decided upon at a meeting of that body in December last. By the issue of these mortgage bonds it is proposed to retire all outstanding obligations of every description, including $537,000 maturing mortgage bonds and $500,000 of secured floating indebtedness, and to provide a sufficient working capital.

IT was supposed that the refusal of the United States Supreme Court to hear the appeal of the Ohio-Mather-Siberia case from the court of appeals had ended the famous suit. It is ended, so far as the Ohio is concerned. She will get her $70,000 from the other two, and is out of the fight. The decision of the court of appeals was that each of the other two should pay half this amount, and the attorneys for the Siberia will bring suit against the owners of the Mather to compel that steamer to pay the whole amount. When the court of appeals reversed the decision of the United States district court at Detroit, which held all three to blame, and divided the damages equally among them, it at the start held the Mather at fault. The question resolved itself into the placing of the blame between the Siberia and Ohio. The latter steamer was held to have used every precaution that could have been expected of her in the short time allowed by the circumstances just before the collision, but the Siberia did not show to the satisfaction of the court that she, also, had used every precaution. The only member of the Supreme Court who favored issuing the writ of certiorari and reviewing the case was Justice Brown. The Siberia folks do not think the decision of the court of appeals a just one, and they will apply to the district court here for a review of the case as between their vessel and the Mather, and, if it is refused there, will try what can be done before a court of equity. They want the Mather to pay the full damages.

FOR the third time in the history of the country there is now a full Admiral of the Navy, one who has attained that rank through a series of brilliant achievements marked by not a single mistake. It is Admiral Dewey who was one year ago a Commodore commanding seven warships and is now in charge of the finest fleet that ever flew the American flag in foreign waters. By his promotion the Admiral becomes the ranking military officer of the whole government service. His position to the navy is that of a general to the army, and he has the privilege of continuing as the ranking officer of the naval service so long as he elects. The bill promoting him names no time when he shall retire, but leaves it optional with the Admiral. His advancement, however, will not result in his relief from command at Manila, but it is expected that he may wish to return home later on after affairs there have assumed a more tranquil state. On Friday the nomination was made and Secretary Long at once cabled the Admiral of his promotion. At the same time he was directed to hoist the flag of an Admiral, wear the uniform of one, and exercise all the functions of an officer of this high grade. As the blue field with four white stars is run up on the Olympia, every ship in the fleet will salute with 17 guns, and hereafter Admiral Dewey becomes the ranking officer on the entire Asiatic Station. There was never much doubt of a bill passing Congress creating this grade for him, although delay followed which at one time seemed to threaten its failure.

MARINE RECORD

ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,

Incorporated.

C. E. RUSKIN, - - - - Manager.
CAPT. JOHN SWAINSON, - - - Editor.
THOS. WILLIAMS, Chicago, - - Associate.

CLEVELAND, Western Reserve Building. CHICAGO. Royal Insurance Building.

SUBSCRIPTION.

One Copy, one year, postage paid, - - $2.00
One Copy, one year, to foreign countries, - - $3.00
Invariably in advance.

ADVERTISING

Rates given on application.

All communications should be addressed to the Cleveland office.

THE MARINE RECORD PUBLISHING CO.,

Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

CLEVELAND, O., MARCH 9, 1899.

OCEAN CABLES.

The growth of the telegraph since the first line, aided by the government appropriation, was built by Samuel Morse between Washington and Baltimore in 1844 has been phenomenal. A graphic statement of this growth, particularly of that relating to submarine telegraphs, appears in the January number of the Summary of Commerce and Finance, just issued by the Treasury Bureau of Statistics. The statement shows that the submarine telegraphs of the world number 1,500. Their aggregate length is 170,000 miles; their total cost is estimated at $250,000,000, and the number of messages annually transmitted over them, 6,000,000. All the grand divisions of the earth are now connected by their wires, and from country to country and island to island the thoughts and words of mankind are instantaneously transmitted. Darkest Africa now converses with enlightened Europe or America, and the great events of the morning are known in the evening throughout the inhabited world.

After referring to the fact that the average depth of the Pacific is but 120 fathoms greater on the average than the Atlantic, the former being 2,160 fathoms and the latter 2,040, such additional difference constituting no serious obstacle in itself to cable construction, and noting the great advances made in constructing, laying and operating submarine cables, shown in part in an increase in speed from three words per minute to fifty and more on the trans-Atlantic cables and a reduction in cost from $100 per message in the first instance to 25 cents per word now, the Summary next deals with the effect of this ready and inexpensive method of transmitting thoughts and words from continent to continent throughout the civilized world as shown in the rapid development of international commerce since it began. As already said, the first successful cable lines between the United States and Europe were put into operation in 1866. In that year our commerce with Europe amounted to $652,232,289; in 1876, to $728,959,053; in 1886, to $896,911,504; in 1896, to $1,091,682,874, and in 1898, to $1,279,739,936, while our commerce with the whole world, which in 1866 amounted to $783,671,588, had by 1898 reached the enormous sum of $1,847,531,984.

It is less than half a century since the practicability of marine telegraphy was demonstrated, and only 33 years since the first successful cable was laid across the Atlantic. Now there are about 20 such cables, 13 of which operate between the United States and Europe, while three others span the comparatively short distance between South America and the African and South European coast lines. Every body of water lying between the inhabited portions of the civilized world has been crossed and recrossed by submarine telegraph lines except one—the Pacific ocean; and even that vast expanse of water has heen invaded along its margin by submarine wires stretched along its western border.

NAVAL RESERVES.

The British naval reserve now numbers 20,000 men. Within the year important modifications have been made in the regulations for recruiting and training. There are three classes of the reserve, the first made up of the experienced seamen or of men who have seen six years sea service, the second, of those who have seen three years sea service, with an age limit of 19 to 30 years, the third of boys under 16½ years undergoing training for seafaring life. The third class is not for active service, being merely a feeder for the other classes.

England, France, and other naval powers of Europe are all giving more attention to their reserves. None of them has a finer body of enthusiastic and loyal men in the reserve than the United States. Up to the time of the late brush with Spain, very little attention was given to the training of men for naval service. Had it not been for the enthusiasm and enterprise of a few individuals the interior States would have had no naval reserve. The war demonstrated the need of such an organization, and that demonstration should not be allowed to go unimproved through the inertia of those in high places.

CONSUL-GENERAL PRATT writes from Singapore as follows: The telegraphic announcement that the President had recommended the establishment of regular and frequent steamship communication with the new possessions of the United States has met with most favorable reception here. The trade between the Philippines and Singapore and between the latter and the United States is of importance, and this, I think, could be greatly facilitated and increased by the very plan which the President recommends. Since the chartered steamers which for the last few years have been running between New York, this port, and those of China and Japan have done so well, I can but believe that regular American-owned lines, and in particular one plying between New York, Singapore, and Manila, with a smaller corresponding line between here and lesser Philippine ports, would do far better still.

MAJOR J. H. WILLARD, Corps of Engineers, U. S. A., Vicksburg, Miss., advertises in this issue of the RECORD for sealed proposals for excavating 7,500,000 cubic yards of earth, more or less, along route for diverting mouth of Yazoo river, near Vicksburg, Miss., under continuous contract. Bids will be received until April 5, 1899.

THE NEW BATTLESHIPS.

The plans for the three battleships authorized by the naval appropriation bill just passed are being worked out. The general features of the ships have been defined, subject to the approval of the Secretary of the Navy. The battleships will be a thousand tons larger than the Maine and Missouri class, of a total displacement of 13,500 tons, making them by far the largest ships in the American navy and about equal in dimensions to the best type of battleships now being constructed abroad. Though larger than the Maine the ships will be laid on almost the same lines, being only a little greater in every dimension. They will each carry four 12-inch guns in turrets. This caliber is an inch less than the guns carried by the Oregon, but by improved design they will be almost equal in penetrative power.

The speed of the ships will be 18 knots an hour, an advance of two knots over the Oregon class, but just equal to that of the new Maine. For protection against the enemy's shot, the battleships will have one belt of armor seven feet six inches broad, running clear around the water line, three feet six inches above, and four feet below. It was originally planned to have this armor 16 inches thick, but the designers have now reduced the thickness to 12 inches. This change was made in order to strengehen the casements, which will be made seven and a half inches thick instead of five inches.

Altogether there is a notable absence of new features in the designs of the battleships, which fact, taken in connection with the small amount of progress reported in the designs for the Maine class, may be an indication that our naval designers have very nearly approached the ideal battleship in their work. As far as these particular ships are concerned, the fact that the Navy Department is limited to $300 per ton in the purchase of armor, makes it impossible to build them in the absence of further legislation, and the department will be obliged to content itself with the mere preparation of detailed plans during the coming summer.

The six crusiers of the armored type provided for, can, however, be built, and Chief Constructor Hichborn is already working out the designs upon lines approved by the board of bureau chiefs. It is the purpose of the Navy Department to place contracts for these ships at the earliest possible moment. They represent a type of cruiser which would be of the greastest value just now for our foreign service. The plans call for vessels of about 2,600 tons, and the ships will be improved Marbleheads, so to speak, being 600 tons larger than ships of that class and with better batteries and more coal capacity.

A most important consideration is that they will be sheathed with wood over the steel hull and fully coppered, enabling them to keep the seas even in tropical waters for many months without seeking a dry dock. The battery will be made of 6 5-inch guns for each ship. The cost is expected to be considerably more than that of the Marblehead, which was $674,000, the amount allowed by Congress was $1,141,800 each. The difference in cost is accounted for by the many improvements made in the Marblehead's designs, a notable one being the use of machinery, giving much greater speed.

SMALL VESSELS WANTED.

Admiral Dewey is again pressing on the Navy Department the urgent need of vessels of light draught as a means of communication among the numerous islands of the Philippine group. To this end the gunboat Vixen, which figured at the outset of the Cuban campaign, has been ordered to be immediately fitted out at the Norfolk navy yard for sailing for Manila. This will take about a month, and it probably will be three or four months before she joins Dewey's fleet. Besides the Concord, which is perhaps a little too large to be classified as one of the small craft, the only light draught vessels now in the Philippines available for running about those waters are the Petrel and the Helena. The Castine and the Princeton, however, are speeding in that direction, but the small craft equipment there will still be inadequate. The department is anxious to afford Admiral Dewey all the assistance possible. He has repeatedly called attention to the great importance of this work, and has emphasized the fact that it is the small vessels, fit to skirmish about in the shallow waters and to run in and out of harbors where the larger ones would be useless, that he wants, rather than the heavier types.

A NEW LIFE-SAVING STATION.

Grand Marais is to have a life-saving station. General Superintendent Kimball, of the life-saving service, has selected the site and the building is to be erected this spring, so that the station can be in full operation during the entire season of navigation.

Grand Marais is noted as a harbor of refuge, and is the only one between Whitefish Point and Grand Island. In the stormy season in spring and fall hundreds of boats put in there for shelter, and a life-saving station established there can be of a great deal of good.

Badly needed as the life-saving station is, the expense of it is but a drop in the bucket to the money the government has expended to make it a fit harbor of refuge. So far the government has expended $285,750 on it and the engineer's estimates to complete the harbor improvements of all kinds call for $178,000 additional. When the work is finished the entrance to the harbor will have a depth of 15 feet, enough to admit all but the largest vessels on the lakes.

The government started work on the harbor in 1881, at which time it would not admit vessels with a greater draft than nine feet, though once within the bay there was ample room to float the largest vessels. The pressing need for a harbor of refuge between Whitefish Point and Grand Island led the government to make its expenditures, which have been more than warranted by the lives and shipping since saved.

THAT GRAIN BILL OF LADING.

At a meeting of the committees consulting with Lake Carriers' Association held in Buffalo on Wednesday discussion turned entirely to the proposed form of a new bill of lading and conditions attending the transportation of grain from the producer to the seaboard. It was finally agreed to appoint a committee, representative of all the interests, to formulate a bill of lading which would be generally accepted. The committee is made up as follows: Edward Michaels, representing the interests of the Buffalo elevators; George Spencer, the Duluth grain merchants; H. H. Peters, the Chicago grain merchants; F. O. Paddick, the Toledo grain merchants; Frank Harriott, the trunk lines; O. E. Lohrke, the New York grain merchants; L. K. Passmore, the Philadelphia grain merchants; Frederick Truscott, the Buffalo grain merchants.

TRADE COMPETITION OF UNITED STATES WITH ENGLAND.

The wonderful achievements of the United States in the way of reducing the costs of the production of iron and steel form the subject of one of several articles that have been written for the Review by a high authority. These figures supply the most obvious answer to the now almost daily question as to how the Unites States have succeeded in bringing their cost of production down to such a low level with nominally high labor costs and long transportation still a part of their daily lot. It appears that the labor cost of producing the crucible steel that was manufactured in the United States between 1860 and 1895 was about £15 ($27.99) per ton, against probably not more than 10s. ($2.43) per ton at the present time; and that between 1880 and 1890 the labor cost of producing a ton of pig iron, speaking generally, had been reduced more than one-half, while in some States the average annual output of pig iron per employee at the furnaces had more than trebled. All this, however, is not any more wonderful than the revolution that has been brought about in the cost of raw materials. It seems but yesterday when Lake Superior ores, delivered at works in Pennsylvania, cost 30s. to 35s. ($7.25 to $8.51) per ton, whereas the same ores cost to-day about 15s. ($3.65), more or less. Most of us can remember when coke cost 30s. ($7.20) per ton delivered at Chicago, while the same fuel at present costs 12s. to 15s. ($2.92 to $3.65) similarly delivered. The wage cost of producing a ton of pig iron at the furuaces at Pittsburg or Chicago was equal to 20s. ($4.86) less than a quarter of a century ago, whereas to-day in the best regulated works it costs 2s. to 3s. (49 to 73 cents). In most other items of cost, similar economies and reductions have been effected. It has been the union of more efficient labor, more economical transport, and increased competition among mine owners that has enabled this remarkable change to be effected. Twenty years ago, mine owners were hardly satisfied with less than 10s. ($2.43) per ton profit on the highest grades of ore. To-day they will gratefully accept less than a shilling (24 cents). The business is nevertheless a prosperous one, because the mine owner has substituted small profits on a large output for large profits on a small output, and is doing a more sound and healthy business. The same remarks apply to the pig-iron maker, the coke manufacturer, and the producer of finished descriptions of iron and steel. This tendency to look to larger yields and smaller profit has not reached finality. It has been manifested in a marked manner in the recent combinations of works and mines and in the growing disposition to get rid of all extraneous sources of expenditure. In all branches of business alike, it is a fundamental axiom that the larger the scale of operations the cheaper the possible costs of production. The United States have given practical expression to this principle on the largest possible scale, and thus, and thus only, have they been able to place themselves in the front rank of iron-producing nations.

The success of our American friends has been due to their vigorous and persistent attention to elements of businss administration which have been less effectively developed at home. The first of these has been a more complete control of the conditions of labor, based upon a generous recognition of the principle that nominally high-priced labor is not necessarily the most expensive. The second has been the command of extensive economical and competitive means of transportation. The third has been the substitution of combination for competition wherever possible. The fourth has been the practical application of the old rule that if you want to produce cheaply you must produce on a large scale. There are other lessons inculcated by American experience for those who are capable of reading between the lines. Unfortunately, British manufacturers are often so situated that they can not effectively apply all these lessons, but we can not help thinking that they might do so to a larger extent than they have hitherto done.

SUBMARINE ARC LAMP.

A new submarine arc lamp promises to be of great value in diving and wrecking operations. It is said the idea of such a lamp was suggested by the necessity for exact information which could not be supplied when the blowing up of the Maine in Havana harbor was being investigated. Up to that time no sufficient light was available even for the efficient working of the divers, much less for the taking of photographs, and photographs of the ship as she lay at the bottom of the harbor would have been invaluable to the investigating board. Even the divers declared they could distinguish very little on account of the foulness of the water and general confusion of the debris, and the hazardousness of basing any part of a decision upon the sense of touch alone was recognized. The new lamp is of very high candle power, lighting up a large area, and enabling divers and other marine investigators to carry on their work with facility. It will burn for 150 hours on one set of carbons. It weighs, when submerged, a trifle more than its own bulk of water, and can remain suspended at any fixed point or carried about at will by the diver. By moving a handle the diver can spread the light equally on all sides or concentrate it in any particular direction. Among the uses to which the lamp is intended to be applied are the examining and cleaning of the bottoms of merchant and battleships, attaching hoisting chains to guns and other movable parts on sunken vessels, placing and recovering submarine mines, constructing bridge piers and cofferdams, and in submarine photography.

OHIO HARBOR APPROPRIATIONS.

The following are the provisions made by the river and harbor improvement bill, which was passed by the Senate yesterday:

Lorain's portion is to be $50,000 cash. The continuing contract limit is reduced from $645,000 to $600,000. That the engineers regarded as high enough.

Conneaut is restored from $75,000, Senate figure, to $100,000, the House allowance. Fairport is restored from $75,000 to $100,000; Sandusky, from $60,000 to $80,000.

Toledo is to get $150,000. Her continuing contract limit is cut from $855,000 to $800,000, which the engineers believe will be enough.

CONTRACT FOR NEW STEAMER.

It is expected that the contract for the railroad car ferry steamer for the Flint & Pere Marquette Railroad Co., which is to be practically a duplicate of the Pere Marquette, built by the Globe Iron Works Co., Cleveland, will be awarded this week.

In reference to the foregoing I have received the following note from Mr. C. W. Stiver, secretary F. W. Wheeler, ship and engine builder:

Referring to the enclosed clipping taken from the MARINE RECORD, February 23, we would call your attention to the fact that the car ferry steamer Pere Marquette was built by F. W. Wheeler & Co. and not by the Globe Iron Works, as stated. I don't know that any particular harm has been done but it strikes me that some of the other yards have been receiving too much credit lately for work done by F. W. Wheeler & Co., and I think in this instance it would be well to make the correction.

PETROLEUM AS FUEL ON VESSELS IN THE EAST.

A letter to the Moniteur Official du Commerce, from Ismailia, Egypt, says:

A London firm has demanded from the Suez Canal Co. authority to install on its lands at Port Said and Port Thewfik, four reservoirs for petroleum, of 5,000 tons each. The plans for the work are finished and the engineer already at Port Thewfik. The same firm has obtained a grant of land at Borneo, of 200 miles, containing immense deposits of petroleum—sufficient to supply vessels going to the Far East for many years. Eleven reservoir depots have been established between Borneo and Suez. Two vessels with cargoes of petroleum have already passed through the canal and will act as transport tanks to supply the reservoirs. As soon as the reservoirs at Suez are finished, the coal supplies of Aden, Perim, Bombay, Colombo, etc., will be practically useless.

From an economical point of view, there is no doubt that petroleum as fuel has great advantage over coal. It is estimated that a ton of petroleum, or the residue of petroleum, is equal to three tons of coal, a clear saving on the price of the fuel, admitting that a ton of petroleum costs as much as a ton of coal, which is hardly probable. A further advantage will be the economy of space gained in the storage magazines. So far, a kind of blackish residue from the refineries of Batum, which had no previous value, has been used. It is proposed to utilize this residue as well as the oil taken from the wells at Borneo, which is much inferior in quality to that of Europe.

The use of this fuel is certain to become more and more general. It appears that modifications of comparatively little expense will enable engines using coal to use petroleum; while the shipment of this fnel will be the simplest thing in the world. Vessels will be moored to docks provided with pipes connecting with the reservoirs; and, once these are put in communication with the ship's tanks, there only remains the turning of a faucet and the loading will be quickly done. Already, the boats of the Russian volunteer fleet are constructed so as to burn with equal facility petroleum or coal. Should this system of heating be applied to navigation generally, the coal-mining industries will receive a severe blow.

CANADIAN-BRITISH STEAMSHIP COMPANY.

(CONSULAR REPORT.)

Recent newspaper articles in regard to the formation of a new trans-Atlantic steamship company, to have its western terminus at Paspebiac, have led me to make a personal investigation of the matter, the results of which I give below:

The Bay of Chaleurs Railway was originally intended to be built from Metapedia, a station on the Intercolonial Railway, to Gaspe Basin, on the Bay of Chaleurs, to keep the Gaspe peninsula in communication with the rest of Canada during the winter months. Early in the history of this railway, a charter was also obtained by the Atlantic & Lake Superior Railroad Co. to build an independent road from Metapedia to Gaspe Basin. This charter has not been acted upon, because the latter company seems to have obtained control of the portion of the Bay of Chaleurs' road which has been completed and operated to New Carlisle, within three miles to Paspebiac, on Gaspe Basin, and it is to be extended to Paspebiac as rapidly as possible.

The Canadian Steamship Co., controlled by the Great Western Railway Co., of England, is now engaged in the construction of a large wharf at Paspebiac, which is to be 1,600 feet long, with an elbow 200 feet wide at the end. It is protected from all winds. Four hundred men are engaged in the extension of the railway from New Carlisle to Paspebiac.

The Atlantic & Lake Superior Railroad seems to have finally gained connection between the Lake Superior district and the Atlantic seaboard at Paspebiac. Some time ago, it was stated that one of its objects was to secure the output of western grain by an all-Canadian route. Paspebiac is well situated for the purpose, on account of its being much nearer to Europe than the inland ports of Quebec and Montreal, and because it will be open at least two months longer in the winter and much earlier in the spring than the St. Lawrence cities, besides cutting off about 600 miles of difficult navigation. This advantage will admit of the shipment of a large quantity of western grain and allow the western farmers a longer season in which to market their harvest.

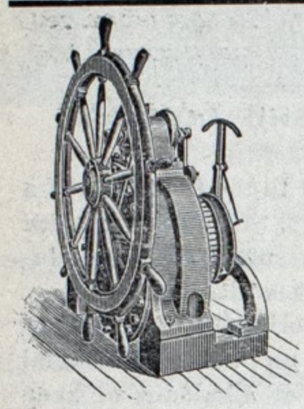
Though I do not believe the harbor of Paspebiac can be kept open all the year, yet the proposed route has a great advantage over the St. Lawrence route, in that it can be used certainly as late as the 15th of January and again as early as the 15th of April, if not by the 1st, gaining three months of open navigation out of the year.

Gaspe Basin. ALMAR F. DICKSON, Consul.

THE Detroit Graphite Manufacturing Co. have just issued a finely illustrated book of over 100 pages showing half tone cuts of some of the largest structures, vessels, bridges, etc. on which the superior graphite paint has been used. The graphite paint has had a large sale for use on vessels on the lakes, and was used by the United States Government for the war color of the vessels of the Atlantic squadron. The Navy reports show that as such it has stood well, has clung closely to the metal, and has not become brittle. The reports also state that it has not faded to any appreciable extent. The same paint is also used in water-tight compartments and double bottoms. The bilge-water does not affect it. The fact that the paint has a waterproof character is a strong point in favor of its use for these purposes. It is so tough that it forms a continuous coating over the seams and surfaces of the iron, which permanently retains its continuity. The paint has also been found to be particularly adapted to preserving canvas-covered decks. When the canvas has been properly treated with the paint, it is not injured by water or continued moisture. Salt air will also have no effect on it. The heat of mid-summer does not soften it, while the cold of winter and frost and ice do not crack or destroy it. Indeed, it seems not only to protect the canvas by covering it, but to preserve its fibre and make it more enduring. For all practical purposes it is proof against fire, such as is occasioned by cinders from smokestacks or from other incidental causes.

IT is stated that Capt. Adolph Frietsch, who has made a small boat voyage across the Atlantic, will now sail from San Francisco to Manila in a flat-bottomed center board boat 24 feet long.

Queen City Patent Hydraulic Steerer.



The best and most reliable.

Generates no heat in pilot house.

Has large hand wheel.

Can be changed from power to hand steering instantly.

A favorite with pilots.

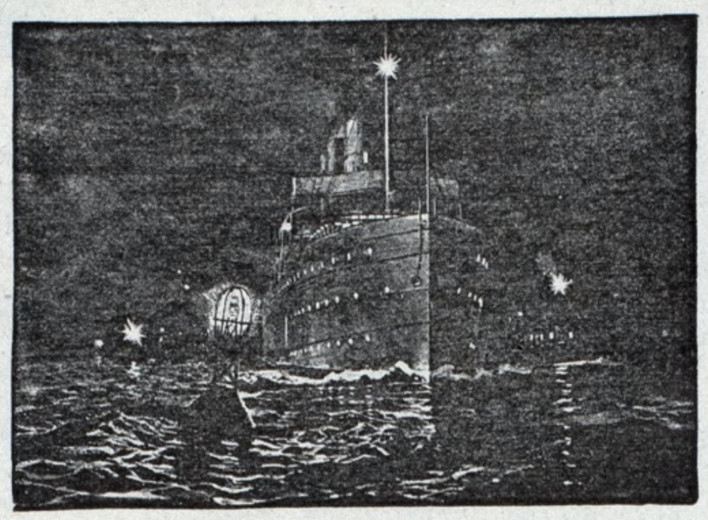
Send for References.

Queen City Engineering Co.

BUFFALO, N. Y.

Pintsch Gas Lighted Buoys.

Adopted by the English, German, French, Russian, Italian, and United States Light-House Departments for channel and harbor lighting. Over 800 gas buoys and gas beacons in service.



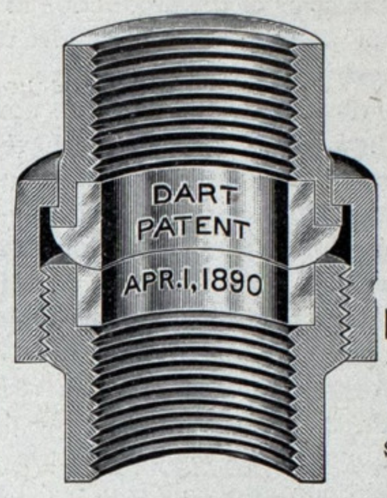
Burn Continuously

from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

Controlled by

THE SAFETY CAR HEATING AND LIGHTING CO.

160 Broadway, New York City.



The Best Union

Made in the U. S.

Mnf'd by the

E. M. Dart Mfg. Co.

Providence, R. I.

Send for circulars and prices.

Almy's Patent Sectional WATER TUBE BOILERS.

NOW USED IN

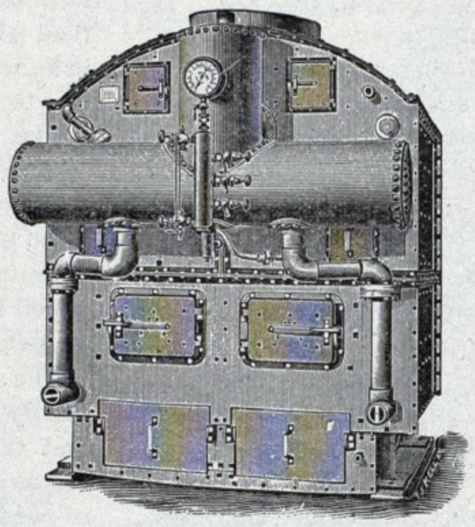
21 Passenger Boats from 70 to 160 ft. long.
61 Steam Yachts from 50 to 180 ft. long.

U. S. TORPEDO BOAT "STILETTO."

Numerous freight and fishing steamers, launches and stationary boilers are giving most excellent results.

ALMY WATER TUBE BOILER CO.,

178-184 Allens Ave., near Rhodes St., PROVIDENCE, R. I.



W. A. McGILLIS & CO.

DREDGING.

57 WADE BUILDING. CLEVELAND, OHIO.

SHOOTING STARS.

It is calculated that, in the course of every 24 hours, about 400,000,000 of meteorities fall to the earth, including those visible only through telescopes.

This is rather startling. What if you or I should some day be struck by one of these solid, hard little bodies, darting as they do towards earth with speed swifter than that of a cannon ball? True, they are not really stars, neither are they really planets. But they are, to say the least, often much larger than a cannon ball.

Four hundred millions every 24 hours! Does it not seem singular that we do not see them constantly dropping to the ground? The truth is we should see them, and feel them, too, and dire would be the danger to human life, but for a certain protecting something folded round this earth of ours to ward off the peril. That "something" is the earth's atmosphere. But for the thick, soft, strong, elastic air through which the meteorites have to pass, they would fall with fearful violence, often doing terrible mischief. As it is, we are guarded. The shooting star, drawn by the earth's attraction, drops into her atmosphere, darting with tremendous speed. In consequence of this speed and the resistance of the air, it catches fire. That is when we first see it. The meteorites are believed to appear at the height of about 70 miles, and to disappear at a height of about 50 miles. So that, in one instant's flash, the shooting star has traveled some 20 miles toward us. Then the light goes out. The little meteorite is burnt. It falls to earth still; but only as fine dust, sinking harmlessly downward.

Not only are the meteorites themselves countless, a matter easily realized, but the families or systems of meteorites appear to be countless also. They, like the systems of Jupiter and Saturn, are each a family within a family—a part of the solar system, and yet a complete system by themselves. Each circles round the sun, and each consist of millions of tiny meteorites. When I say "tiny," I mean it of course only by comparison with other heavenly bodies. Many among them may possibly be hundreds of feet and even more in diameter, but the greater proportion appear to be much smaller. It is not impossible that multitudes beyond examination exist, so small in size that it is impossible we should ever see them, since their dying flash in the upper regions of our atmosphere would be too faint to reach our sight.

The earth, traveling on her narrow orbit round the sun, crosses the track of about 100 of these systems, or rings. Sometimes she merely touches the edge of a ring, and sometimes she goes into the very thick of a dense shower of meteorites. Twice each year, for instance, on the 10th of August and the 11th of November, the earth passes through such a ring, and very many falling stars may be seen on those nights. Numbers of little meteorites, dragged from their orbits and entangled in the earth's atmosphere, like a fly caught in a spider's web, give their dying flash and vanish.

Once in every 33 years we have a grand display of meteorites in November; tens of thousands being visible in one single night. The meteorites in that ring have their "year" of 33 earthly years, and once in the course of that long year our earth's orbit carries her deep into their midst. In this single November ring there are myriads upon myriads of meteorites, spreading through millions of miles space.

Yet this system is but one among many. There is no reason whatever to suppose that the streams of meteorites cluster more thickly about the orbit of the earth, than in other parts of the solar system. No doubt the rest of the planets come across quite as many. Indeed, the wonderful rings of Saturn are probably formed entirely of meteorites—millions upon millions of them, whirling round the planet in a regular orbit belt, lit up by the rays of the sun. Also it is believed that the meteorite families cluster more and more closely in the near neighborhood of the sun, rushing wildly around him, and falling by millions into the ocean of flame upon his surface. It has even been guessed that they may serve in part as fuel to keep up his mighty furnace heat.—From "The Story of the Sun, Moon and Stars," by Agnes Gilberne, published by the National Book Co., Cincinnati.

SCHOOL FOR MERCHANT MARINE IN RUSSIA.

I transmit a translation of the regulations, established by imperial authority, for the management of an institution recently organized in this city, which has for its object the training of young men in the theory and practice of navigation, in order that they may become competent to take command as masters and mates on Russian merchant vessels.

The studies make of those who successfully pass the course highly educated men, familiar with the English, French, or German languages, physics, mathematics, theoretical mechanics, commerce, political economy, bookkeeping, physical geography, nautical astronomy, shipbuilding, commercial geography, law, hygiene, etc.

I have thought it advisable to bring the knowledge of this establishment to the attention of the Department at this particular time, for the reason that it would, in my opinion, be highly advantageous to our future commercial and merchant-marine interests if similar institutions could be successfully established throughout the United States, either in connection with educational institutions or as separate establishments.

As we shall furnish the world with food and manufactured goods, both patriotism and profit demand that these products be carried in American ships, and that these ships be manned and officered by competent Americans.

We move quickly in the United States, and it requires but a slight knowledge of our people to predict that in ten years' time we shall have the largest merchant fleet afloat.

I have been told by Americans who have traveled much in European and Asiatic waters that an American ship is rarely met with, and certainly my own experience as consul at Odessa during the past thirteen years confirms the statement. I have never on a single occasion seen an American ship in the Odessa harbor, and yet, during the year 1897, the official returns show that 1,192 steamers and 34 sailing vessels, having an aggregate tonnage of 1,761,339 registered tons, entered this harbor. Of these, 663 steamers, having a registered tonnage of 1,050,028 tons, were British.

Under the circumstances, it is not surprising that the Russian government is now admitting ships for the Russian foreign and domestic trade free of duty, and is also establishing and endowing marine schools for its coming merchant-marine officers.

THOS. E. HEENAN,
Consul.

Odessa.

OWEN SOUND COMMERCE.

An Owen, Sound, Ont., correspondent, speaking of the commercial growth of that place, says: "For 15 years the C. P. R. found an elevator of 250,000 bushels capacity sufficient for their trade at this port. In 1897 it became necessary for them to put up an additional elevator of 850,000 bushels capacity, with a new marine leg of 10,000 bushels capacity per hour. Also the largest flour sheds on the Canadian side of the Great Lakes were erected. During the first year of the operation of the new elevator 2,264,247 bushels of grain were handled, and in the season of navigation lately closed this amount was increased to 3,184,102 bushels. In addition to this, during the past season the company handled through its sheds 103,161 tons of western

flour, etc., and had return freights westward amounting to 67,904 tons. A largely increased amount of local freights was also handled by the C. P. R. during the past year. In the spring of 1897 the company opened up a new trade at Owen Sound by establishing a line of steamers with Gladstone, Mich., and Chicago. The steamer Alice Stafford has run regularly upon this route and has from time to time been assisted by other steamers. During the past season of navigation the Stafford alone brought to this port the phenomenal quantity of 31,648 tons of merchandise, principally American flour, sugar and gluten meal for export.

INSPECTOR OF HULLS AND INSPECTOR OF BOILERS.

STEAMBOAT-INSPECTION SERVICE, TREASURY DEPARTMENT, MARCH 17-18, 1899.

The United States Civil Service Commission announces that on March 17-18, 1899, examination may be taken at any city in the United States where the Commission has a board of examiners, for the positions of Inspector of Hulls and Inspector of Boilers, in the Steamboat-Inspection Service, Treasury Department.

Two days will be allowed for this examination.

The subjects, and the scope thereof, of the examinations for these positions, will be found in Sections 146 and 148 of the Manual of Examinations revised to January 1, 1899.

Applicants for this examination must be between the ages of twenty-five (25) and fifty-five (55) years, and must be legal residents of the Pacific Coast.

Applicants for examination for Inspector of Boilers must be physically able to enter a boiler through a manhole nine by fifteen (9x15) inches.

Applicants also must have had certain practical experience and must have received license from the Treasury Department to act as master or chief mate of seagoing vessels. Full and specific information upon this matter will be found under "Steamboat-Inspection Service," page 80 of the Manual of Examinations revised to January 1, 1899.

This examination is open to all citizens of the United States who comply with the requirements. All such citizens are invited to apply. From the eligibles resulting from this examination certification will be made to fill the positions of Inspector of Hulls and Inspector of Boilers in the Steamboat-Inspection Service District of Alaska, at a salary of $1,500 per annum each. Attention is invited to the fact, however, that only legal residents of the Pacific coast will be certified for these two positions. Subject to this preference applicants will be examined, graded, and certified, with entire impartiality and wholly without regard to any consideration save the ability shown by the grade they attain in the examination.

Persons desiring to enter this examination should at once apply to the United States Civil Service Commission, Washington, D. C., or the Secretary of the Board of Examiners at the postoffice at Los Angeles, Cal., San Francisco, Cal., Portland, Ore., or Seattle, Wash., for application blanks (Form 1087,) which should be properly executed and promptly forwarded to the Commission at Washington D. C.

In the event that any person desires this examination and is unable to secure the necessary application blanks and receive authority from the Commission in time to enter the examination, he may be examined upon presenting himself to the secretary of the board at any one of the offices named, at 9 a. m., on March 17, 1899, or if he will communicate with the Commission, arrangements will be made to examine him in any city in the United States where the Commission has a board of examiners, provided his request is received at this office in time to ship the necessary examination papers.

LITERARY NOTICES.

We have before us a work on naval architecture entitled "A Manual on Laying-off Iron, Steel and Composite Vessels" by Thomas H. Watson, the well known marine engineer, designer and shipbuilder, published by Longmans, Green & Co., New York, London and Bombay. The principal object of this manual is to meet a need amongst junior ship-draughtsmen, apprentice lofts-men and class students; it should also be studied with advantage by officers of the navy and mercantile marine and it will furthermore prove a valuable auxiliary to experienced ship-draughtsmen, designers and constructors. The contents are clasified under four principal heads, namely, Mercantile Vessels, War Vessels, Composite Vessels and Sheathed Vessels, the former two being divided into many chapters with appropriate headings, and every chapter is prefaced by a synopsis of its contents. To illustrate the text, the work contains 163 excellent and intelligible drawings. The twelve chapters regarding mercantile vessels have the following headlines: Laying- off the Sheer Draught on the Loft Floor; Cant Frames; Decks; Floors and Double Bottoms; Shell Plating; Scrieve Board; Ribbands and Harpins; Moulds; Poor Round and Turtle Back; Expansion of Stringer Plate and Beam Knees; Iron and Steel Masts; Miscellaneous. Those of war vessels: Armor; Shell Plating and Bilge Keels; Double Bottoms; Gun Galleries or Sponsons; Moulds; Draught Marks. The author's aim to make the subject clear by graphic sketch and every day shipyard language has been fully accomplished.

The Shipping World Year Book for 1899, edited by Major Jones, and published at the Shipping World Office, London, E. In this, the thirteenth edition, of this very useful and handy volume numerous and important changes have been made, embracing digests of the liability of Shipowners Act, 1898, and the light dues and Apprentices Act, 1898, the complete tariffs of Japan, Chili, Brazil, British India, Newfoundland and Tasmania, the addition of new ports to the Port Directories, and the tracing of the East Bound and West Bound "Laws" across the Atlantic, adopted, Nov. 15, 1898, and making of the new coaling stations and other features on the map contained therein; The Board of Trade regulations for preventing collisions at sea, together with the new departmental orders governing deck cargoes, the surrender of deserters abroad, the carriage of grain act, and all other important regulations affecting shipping now operative. It also contains a map which shows in distinguishing colors the routes of steamers and railways throughout the world, and the products, ports and coaling stations of all countries and colonies, the tariffs of all nations revised up to Dec. 31, a complete port and harbor directory of the British Isles and of all the principal ports of the world, with particulars from official sources of accommodation, charges, tides, trades, pilotage and towage, and a great amount of additional information relating to trade, commerce and navigation. This volume has been increased to about eleven hundred pages, and gives evidence of great care in its compilation in every detail. It certainly is the best work of its kind in existence, and a most handy and necessary manual for the desk. Price 5s in the United Kingdom and 6s abroad.

WE learn of what is said to be the deepest ocean reading up to date. It is stated that H. M. S. Penguin, on the Australian naval station, reports having recently taken, while on a surveying cruise in the Pacific, sounding to a depth of 28,572 feet, between Auckland and the Tongan Archipelago. While in the vicinity of Tonga, the Penguin investigated the recent disappearance of Falcon Island and discovered that it had subsided 18 feet below the surface. The island was formed by volcanic eruption in 1895 and disappeared in September, 1898.

TOBIN BRONZE

(Trade-Mark Registered.)

Tensile strength of plates one-quarter inch thick, upward of 78,000 lbs. per square inch. Torsional strength equal to the best machinery steel. Non-corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shaftings, etc. Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

The Ansonia Brass & Copper Co.

SOLE MANUFACTURERS,

Send for Pamphlet. 19-21 Cliff St., NEW YORK.

S. F. HODGE & CO.

MARINE ENGINES,
PROPELLER WHEELS,
DECK HOISTERS,
MARINE REPAIRS.
312 ATWATER STREET,
DETROIT, MICH.

Chas. E. & W. F. Peck,

58 William Street, New York City. Royal Insurance Building, Chicago, Ill.

C. T. BOWRING & CO.

5 and 6 Billiter Avenue, E. C., - London, England.

Insurance

BROWN & CO., - - - 202 Main Street, Buffalo, N. Y.
PARKER & MILLEN, 15 Atwater Street, W., Detroit, Mich.
J. G KEITH & CO., - 138 Rialto Building, Chicago, Ill.
LA SALLE & CO., Board of Trade Building, Duluth, Minn.

Are prepared to make rates on all classes of Marine Insurance on the Great Lakes, both CARGOES AND HULLS

INCORPORATED 1794.

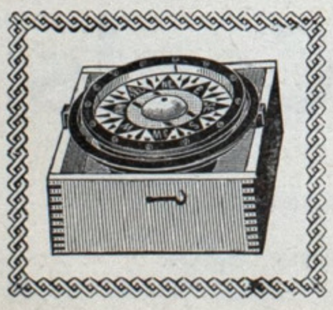
Insurance Company of North America

CAPITAL, Paid up in Cash, - - - - -	$3,000,000.00
ASSETS, - - - - - - - -	10,173,488.90

CHARLES PLATT, President.
GREVILLE E. FRYER, Sec'y and Treas.
T. HOUARD WRIGHT, Marine Secretary.

EUGENE L. ELLISON, Vice President.
BENJAMIN RUSH, Second Vice President.
JOHN H. ATWOOD, Assistant Secretary.

Lake Marine Department, GEORGE L. McCURDY. MANAGER. CHICAGO, ILL.



THE **Bliss** LIQUID (Spirit) COMPASS

Made in seven sizes by JOHN BLISS & CO., 128 Front Street, New York, is finely finished sensitive, accurate and durable. Moves quickly and is extremely steady. Is the best Liquid Compass ever made in this or any country. For sale by ship chandlers generally.

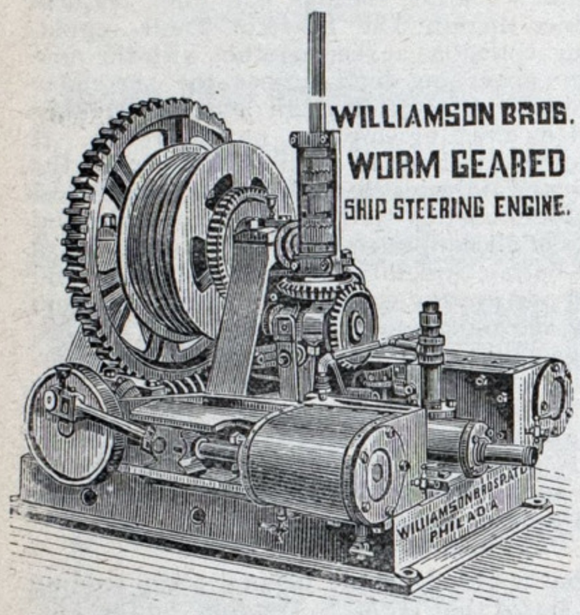
A. J. MORSE & SON.

DIVING APPARATUS

140 CONGRESS ST. BOSTON.

WILLIAMSON BROS.

COR. RICHMOND AND YORK STS., Philadelphia, Pa.



HOISTING and SHIP ENGINES
STEERING ENGINES.

With either Fractional, Spur or Worm Gear of Various Patterns to Suit all Purposes.

M. A. HANNA & Co.

COAL, IRON ORE AND PIG IRON.

Steamboat Fuel at Ashtabula.

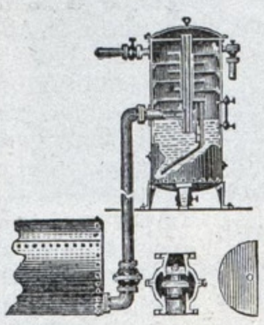
Large Supplies of Best Quality.

Fuel scow with elevators and discharging spouts. Storage of 650 tons. Discharges 150 tons an hour into steamers while unloading cargo.

LIGHTER carrying different grades at all times.

MINERS AND SHIPPERS.

MAIN OFFICE, Perry-Payne Bldg., Cleveland, O.



Buffalo Feed Water Heater

AND PURIFIER.

Made in all Sizes and to Suit all Conditions.

Send for Catalogue.

ROBERT LEARMONTH,
200 Bouck Ave., BUFFALO, N. Y.

PICKANDS, MATHER & Co.

PIG IRON.
IRON ORE AND COAL.

FUEL LIGHTERS AT BUFFALO, ERIE, ASHTABULA, AND CLEVELAND.

At DETOUR, MICH., A FUEL DOCK equipped with Shute capacity of 600 Tons.
Best Quality PITTSBURGH COAL furnished at any time during Day or Night.

WESTERN RESERVE BUILDING, CLEVELAND, O.

Moore's Anti-Friction Differential Chain HOIST

Adjustable Automatic Brake.
Self-sustaining at every point
Highest Efficiency.
A New Movement.
A Perpetual Compound Lever
Powerful, Simple and Durable
Light, Compact and Strong.

11 SIZES.

Half-Ton to 15 Ton Capacity.

Compressed Air Motor Cranes and Hoists.

Hand Power Cranes, Trolleys, Etc.

Chisholm & Moore Mfg. Co.

CLEVELAND, OHIO.

Compasses Adjusted

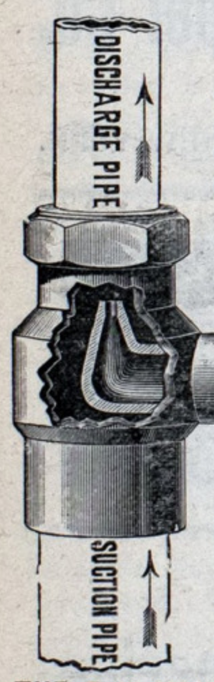
For deviation, and deviation tables supplied. Great facilities for doing the work by day or night.

John Maurice.

Office, 24-26 Market St., CHICAGO.

Use the Vanduzen Steam Jet... # PUMP

THE BEST STEAM JET PUMP IN THE WORLD.



It pumps the most water using the least steam.

Its cost is a little more than the common syphon, but will use only one-third the quantity of steam; and it takes coal (? of $) to make steam.

The **only** reliable Jet Pump for fires on steam vessels.

A No. 7 Pump, costing $25.00, will force water through 50 feet of hose and throw a ¾-inch solid stream of water 75 feet from end of nozzle without fail as long as there is water at end of suction pipe. It will not *freeze*. Has no *valves*.

Every pump guaranteed. Ask your ship chandler for them, or write to us for illustrated catalogue.

THE E. W. VANDUZEN CO., CINCINNATI, O.

WM. WILFORD'S

Matchless Waterproof Cloth and Societe Anonyme De Veluwe, (Japan Paint).

EDWARD A. BUNKER,
Sole Agent,
20 Broad Street, New York City.

WRECKER'S AIR BAGS.

1,000 tons lift ready. Express anywhere. Rent moderate.

Hose, Belting, Packings. Full line Best Rubber. Factory prices.

MINERALIZED RUBBER CO., NEW YORK.

The Cuddy-Mullen Coal Co.

Miners and Shippers of STEAM COAL

FUELING DEPARTMENT FACILITIES.

CLEVELAND HARBOR.—Car Dumper; Eight Pockets, 1000 Tons Capacity; Lighter Steam Derricks.

DETROIT RIVER BRANCH.—Amherstburg: Four Pockets: Three Steam Derricks

SANDWICH—Fourteen Pockets and Two Steam Derricks.

"SOO" RIVER BRANCH.—Two Docks, (Formerly known as the Anthony and Watson Docks,) Equipped with Pockets and Steam Derricks.

GOOD COAL. COURTEOUS ATTENTION QUICK DISPATCH.

General Offices, Perry-Payne Bldg., Cleveland, O.

Youghiogheny River Coal Co.

Miner and Shipper of

OCEAN, YOUGHIOGHENY GAS AND STEAM COAL.

General Office: Erie, Pa. Long Distance 'Phone 409.

Shipping Docks: Ashtabula, O. Long Distance 'Phone 76.

VESSELS FUELED AT ALL HOURS

ELECTRIC LIGHT.

WITH OCEAN COAL ONLY, BY STEAM LIGHTER OR CAR DUMP.

THE W. L. SCOTT COMPANY,

ERIE, PA.

WHOLESALE DEALER IN

Shamokin, Wilkesbarre Anthracite, Youghiogheny, Mansfield, Pittsburg

Vessel Fueling a Specialty by steam lighter or car dump, at all hours. Electric light.

...Coals

MAIN OFFICE: SCOTT BLOCK. LONG DISTANCE 'PHONE 440.

FUELING OFFICE: CANAL DOCK. LONG DISTANCE 'PHONE 320.

Steamboat Fuel at Chicago.

THE Y&L

YOUGHIOGHENY and LEHIGH COAL CO.

J. T. CONNERY, Manager. ARCHIE J. HITCHCOCK, Dock Supt.

MAIN OFFICE: 1238-1242 Chicago Stock Exchange Building.

Long Distance Telephone, Main 5049. 110 LA SALLE STREET.

FUEL DOCKS: No. 1, Michigan Slip and Basin. 'Phone 3046, Main. No. 2, N. Halstead St. Bridge. 'Phone 773, North.

FUEL LIGHTER: Equipped with 125 2-ton Buckets for Fueling anywhere in Harbor.

Steamboat Fuel at Cleveland.

THE P&C

THE PITTSBURGH & CHICAGO GAS COAL CO.

J. A. DONALDSON, Manager. N. J. BOYLAN, Fuel Manager.

OFFICE: 420-421 PERRY-PAYNE BUILDING.

TELEPHONE, MAIN 1888.

FUEL DOCKS: No. 1. River Bed, through Valley R. R. Bridge. No. 2, Main River, Foot of West River Street. } Telephone, West 190.

FUEL LIGHTER: 300 Tons Capacity; Fuel Anywhere in the Harbor.

WE PRODUCE OUR YOUGHIOGHENY COAL, AND GUARANTEE QUALITY.

THE CHASE MACHINE COMPANY,

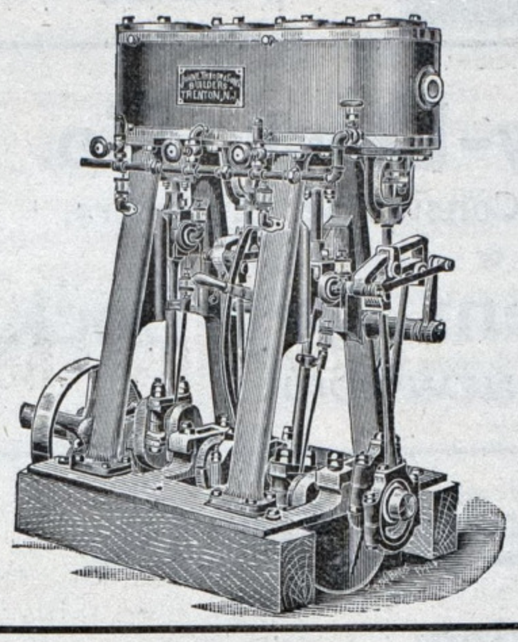
ENGINEERS AND MACHINISTS.

MANUFACTURERS, UNDER THE CHASE PATENTS, OF

Fog Whistle Machines, Hoisting Engines, Steering Engines Automatic Towing Engines, Power and Drop Hammers, and other Machinery. Engineers' Supplies and General Jobbing.

111 ELM STREET. TELEPHONE, MAIN 994. CLEVELAND, O.

John E. Thropp & Sons' Co.



BUILDERS OF

Compound and Triple Expansion

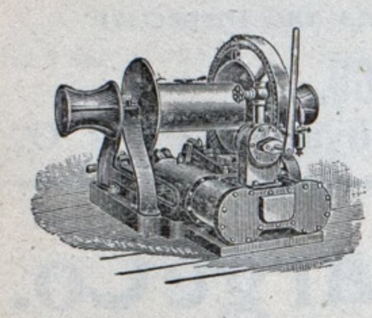
ENGINES,

Boilers, Surface Condensers, Propeller Wheels, Etc.

Contracts taken for yachts and tugs complete. Send for photographs of Engines and descriptive pamphlet.

Works on Delaware & Raritan Canal Basin.

TRENTON, N. J.



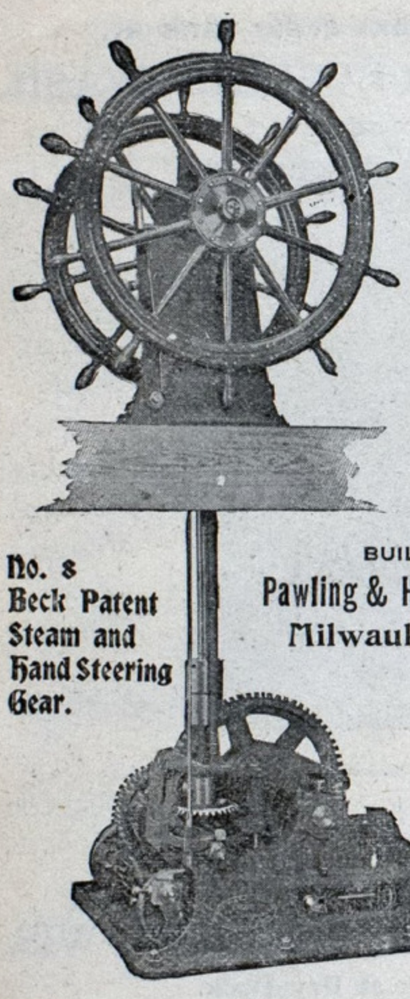
Dock and Deck Hoists

ALL KINDS OF

Machinery and Friction Hoists.

Send for Prices and Circulars.

JACKSON & CHURCH, Saginaw, Mich.



Simplest, Strongest and most Reliable. Changed from Steam to Hand or back by one lever in less than one Second.

No. 8 Beck Patent Steam and Hand Steering Gear.

BUILT BY Pawling & Harnischfeger, Milwaukee, Wis.

WANTED,

A PROPELLER,

arranged for carrying package freight, of about 1200 to 1400 tons capacity, with good boiler and machinery. Must not rate below A 1½. Will only deal direct with owners. Give full description and state lowest cash price. Address,

P. O. BOX 951, CHICAGO.

LIFE BOATS. YAWLS. LIFE RAFTS.

DETROIT BOAT WORKS

DETROIT, MICH.

STEEL, IRON AND WOODEN TUGS.

STEAM AND SAIL YACHTS.

ALL KINDS OF PLEASURE BOATS, FISHING AND HUNTING BOATS, SHELLS, BARGES, GIGS AND CANOES.

DONNELLY CONTRACTING CO.

896 ELLICOTT SQUARE, BUFFALO, N. Y

CONTRACTORS AND CONSULTING ENGINEERS, HARBOR AND CANAL WORKS, ETC.

NEVERSINK CORK JACKET AND LIFE BELT.

Warranted 24 lb. Buoyancy and full Weight of Cork, as required by U. S. Inspectors. **Consolidated Cork Life Preservers.** Superior to all others. **Rings Buoys and Fenders.** SAFEST CHEAPEST.

Approved and adopted by U. S. Board of Supervising Inspectors.

Also adopted by the principal Ocean, Lake and River Steamer Lines as the only Reliable Life Preserver. Vessels and trade supplied. Send for Catalogue.

Awardad four medals by World's Columbian Exposition.

METALLIC and WOODEN LIFE BOATS.

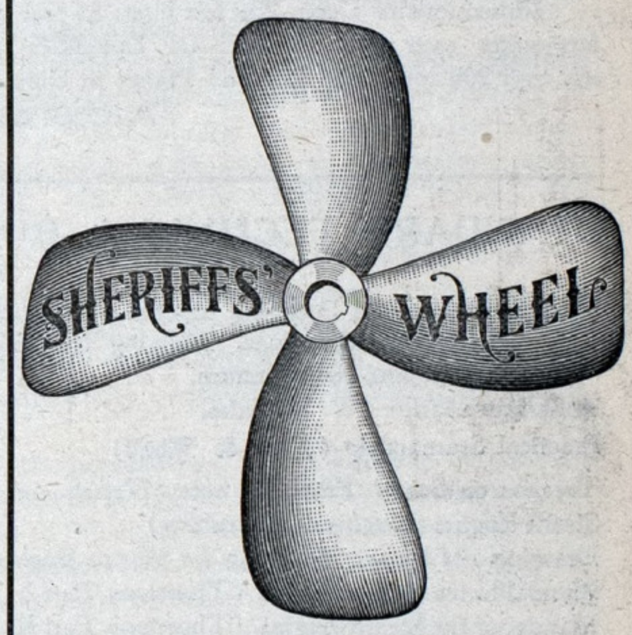
Metallic Life Rafts, Marine Drags.

Manufacturer of Woolsey's Patent Life Buoy, which is the lightest, cheapest and most compact Life Raft known. Send for illustrated catalogue. Get our prices before buying elsewhere.

D. KAHNWEILER'S SONS, 437 Pearl St., New York City.

SHERIFFS MFG. CO.

ESTABLISHED 1854.

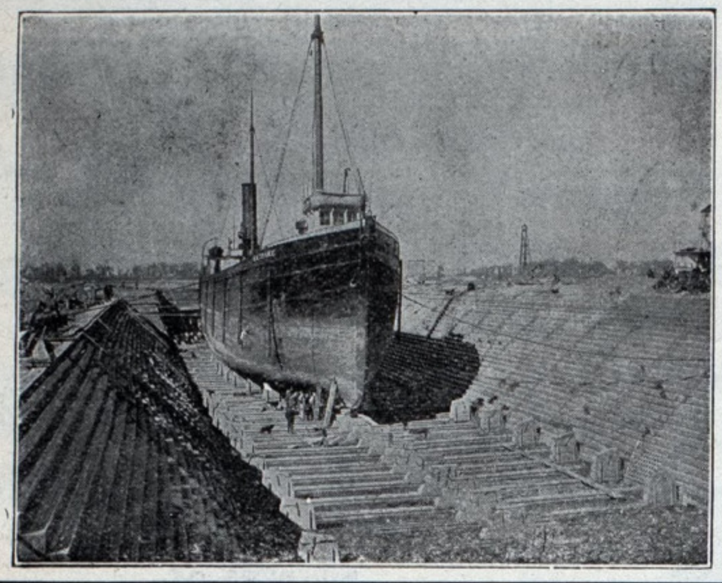


MILWAUKEE, WIS.

For Stationary, Portable, Traction Engines, Tugboats, &c.

Thoroughly Reliable—Perfectly Automatic.

JENKINS BROS., - Selling Agents, NEW YORK, BOSTON, PHILA., CHICAGO.



Craig Ship Building Co.

TOLEDO, OHIO.

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

Repairs to Metal and Wooden Ships a Specialty.

Metal and Wooden Ship Builders.

Simpson Dry-Dock Co.

General Contractors and Consulting Engineers,

BUILDERS OF

Simpson's Patent Dry=Dock,

35 BROADWAY, NEW YORK.

SAFETY HOLLOW STAYBOLT IRON,

Manufactured from

BEST QUALITY SOFT STEEL,

Guaranteed to meet Government Specifications and Inspection.

FALLS HOLLOW STAYBOLT CO.,

Write for Samples and Prices. **Cuyahoga Falls, O.**

A. Gilmore's Sons,

Dry-Docking, Ship Building and Repairing.

EAST SIDE, NEAR IRONVILLE, - - - TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill. RATES OF DOCKING, Ten Cents per registered gross ton for vessels over 200 tons. Jig Mill and Planer in connection with Dock.

'PHONE NO. 157.

STANDARD TECHNICAL BOOKS AND PERIODICALS.

Marine Engines and Dredging Machinery (Maw) Illustrated by over 150 Steel Plates and 295 Wood Engravings, Showing the Engines of leading Screw Steamships of England and other Nations.	$18 00
American Marine (W. W. Bates,	4 00
Practical Seamanship (Todd & Whall)	7 50
Treatise on Screw Propeller, Screw Vessels and Screw Engines, with Marine Record,	5 00
Steam Engine Catechism (Grimshaw)	2 00
Drawing and Rough Sketching for Marine Engineers (Donaldson)	2 50
Manual of the Steam Engine (Thurston) Part I,	7 50
Manual of the Steam Engine (Thurston) Part II,	8 50
Dominion Admiralty Court Practice (Howell)	5 25

Copies of any of the above Books or Periodicals, or any others relating to Steam Power or Shipbuilding, in any of their details, furnished at proportionately low rates by addressing

THE MARINE RECORD, Third Floor, Western Reserve Bldg. CLEVELAND, O.

American Steel Barge Co.

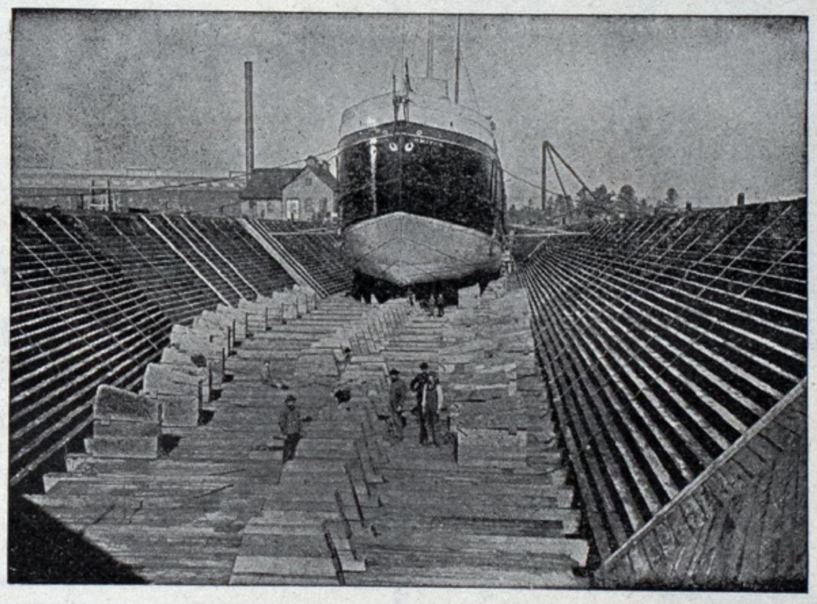
STEEL AND METAL SHIPS

Of all Classes built on shortest possible notice at our yards at

WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300-FOOT BOAT IN DOCK.

Plates and Material always on hand to repair all kinds of Metal Ships in Shortest Time.



Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.

SIZE OF DOCK

Length, Extreme	537 feet.	Entrance, Top	55 feet 9 in.
Breadth, Top	90 " 4 in.	Entrance, Bottom	50 "
Breadth, Bottom	52 "	Depth over Sills	18 "

LARGEST DRY-DOCK ON THE LAKES.

Prices for Repairs and Docking same as at Lower Lake Ports.

SUPERIOR, WIS.

A Number of Propeller Wheels in Stock at Dry-Dock.

IRA B. BASSETT — GEORGE PRESLEY, JR. — A. R. TRAIN.

BASSETT, PRESLEY & TRAIN,

IRON AND STEEL WAREHOUSE.

Ship Plates; Ship Spikes, Angles, Beams; Channel and Tee Iron; Boiler Tubes; Boiler, Tank and Cooper Rivets; Steel Boiler Plates; Bar, Bridge and Car Iron; Hoops, Bands and Sheet Iron.

BURDEN IRON COMPANY BOILER RIVETS.

THE STANDARD AND ONLY RIVET USED BY ALL FIRST-CLASS BOILER MAKERS IN THE UNITED STATES.

Acme Shafting—We own and control the sale of this celebrated brand and carry a full stock of all sizes and lengths. Boiler, Bridge and Tank Plates, Nails, Boat and Railroad Spikes, Smoke Stack Rivets, Boiler Patch Bolts, Open Hearth Steel.

ARCHES AND STRAPS FOR VESSELS A SPECIALTY.

GENERAL OFFICES: 23 Merwin Street.

Telephones { Main 417. Main 423.

WAREHOUSE: 17 to 31 Merwin Street.

CLEVELAND, - OHIO.